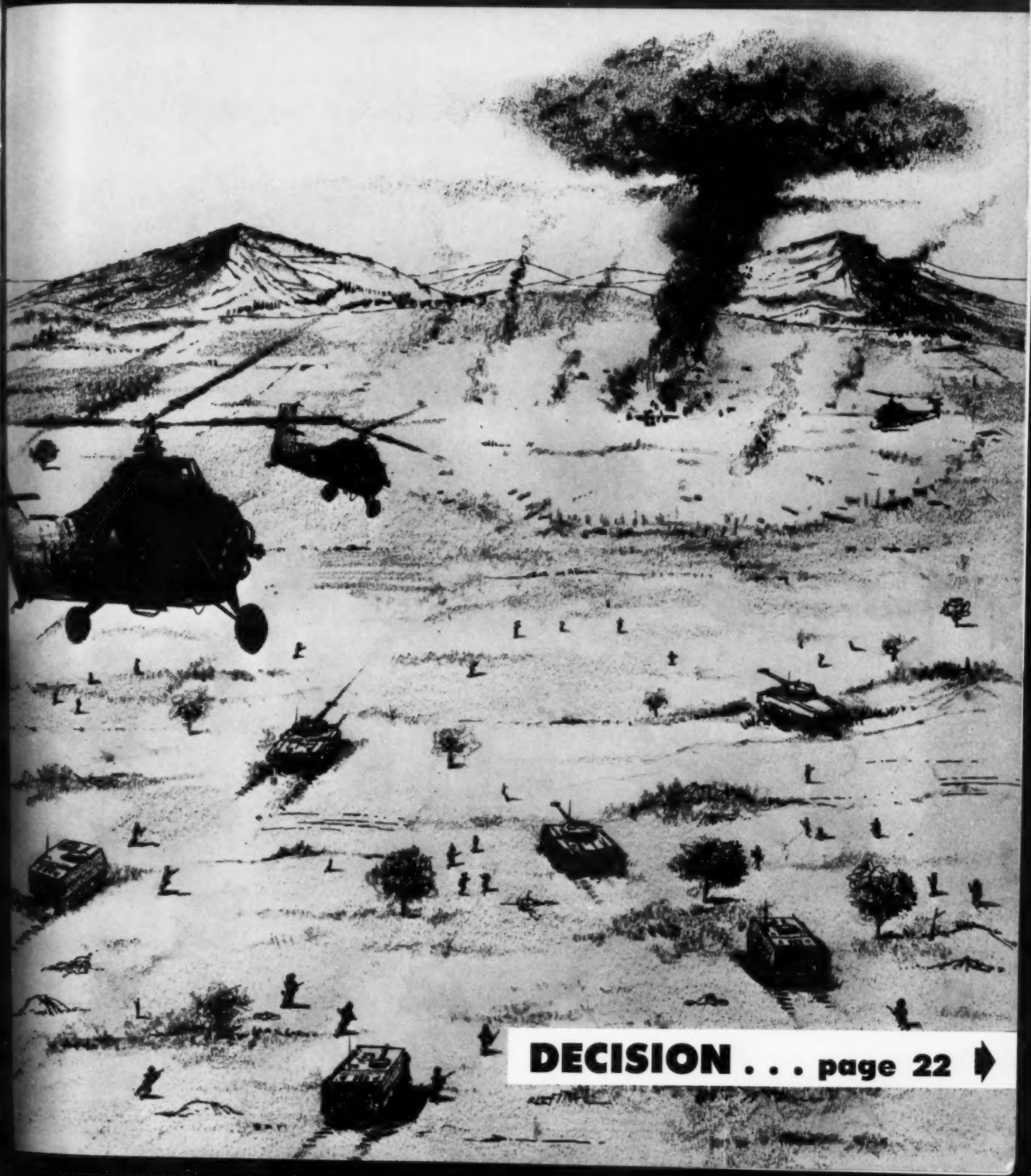
INFANTRY

The Professional Journal for Infantrymen

APRIL-MAY 1960



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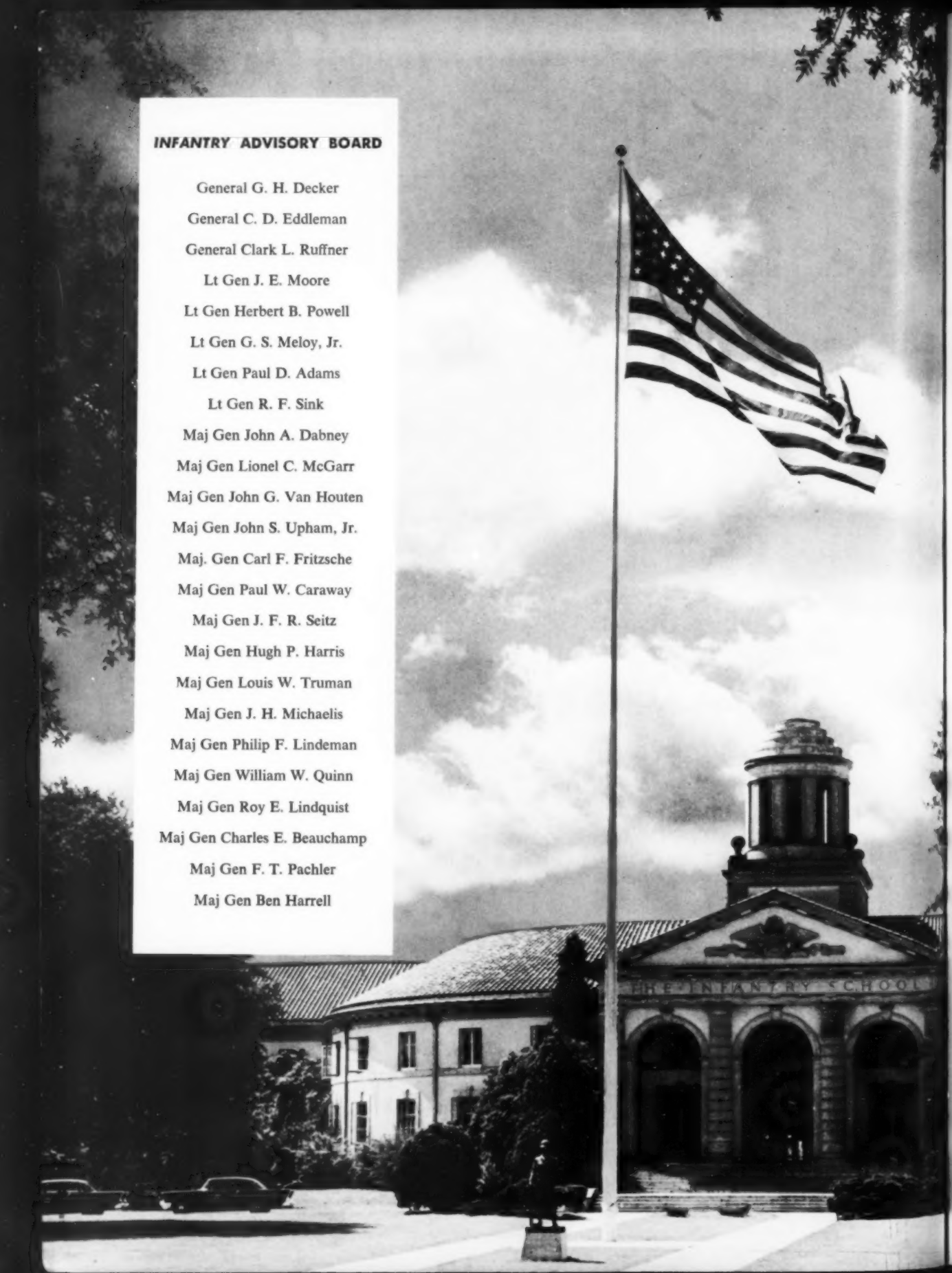
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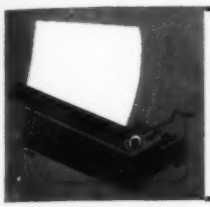

THE EDITOR SAYS

During May we commemorate the annual observance of Armed Forces Day. While the purpose behind this observance is made clear by the message of the Secretary of Defense (right), it is also appropriate for Infantrymen to reflect, at this time, on the part they play on the Armed Forces Team. Unfortunately, we often forget that, although the Infantryman *is* the ultimate weapon, he succeeds only when he receives the full support of other arms and services. This should also serve to remind us of another fundamental truth —that no arm or service can of itself achieve victory. Rather, it is the *balanced* team—*working as a team*—which provides the requisite power for peace.

ARMED FORCES DAY 1960

The President, by Proclamation dated March 5, 1957, directed that the Secretary of Defense and the Secretary of the Treasury arrange each year for the appropriate observance of Armed Forces Day.

This annual program imposes a responsibility upon the Army, Navy, Air Force, Marine Corps, Coast Guard, and Reserve components, to give the public at home and abroad the best possible opportunity, within the limits necessarily imposed for security reasons, to become well informed on all aspects of our national strength and its relationship to the security of the free world.

It is a command responsibility at all levels to utilize this occasion most effectively, and to enlist the cooperation of civil authorities and community leaders so that all our citizens and those of other countries may, by first-hand observation of Armed Forces personnel, displays and demonstrations or through the various media of communications, know how and where we stand as a formidable power for peace with freedom and justice for all.

Thomas S. Gates

THOMAS S. GATES
Secretary of Defense

LETTERS TO THE EDITOR

TRAINING TIME

Sir:

I suggest that *we must* reduce [Basic Training Time] . . . And the problem goes further, and is of particular concern to those like myself who are Active Reservists, and who recognize that their troop program units will have certain training requirements, in one phase or another, following mobilization.

A series of articles indicating some thoughts on how training time in all phases can be reduced, perhaps even with proposed draft ATPs when practicable, would be most welcome.

J. N. Tappe
Major, USAR
Hq 63d Inf Div

The feature article "Cornerstone for Combat Power" touches briefly on this problem. Other suggestions on how we can reduce training time would, of course, be appreciated.— Editor

CHANCELLORSVILLE

Sir:

. . . I thoroughly enjoyed the first in your principles and personalities series ("Chancellorsville," Feb-Mar *Infantry*). Here's hoping that when you use up the nine principles, you go back and start over again with different personalities.

Robert C. Werner
Lieutenant, Infantry
San Antonio, Texas

We have had many favorable comments on the first of the series and regret that space limitations prevented

(Continued on page 21)

FROM THE SECRETARY OF THE ARMY

SECRETARY OF THE ARMY
WASHINGTON

Dear Infantrymen:

A long time ago, Robert Louis Stevenson said, "There are men and classes of men that stand above the common herd: the soldier, the sailor, and the shepherd not unfrequently. . . ."

It was not chance that brought the fighter and the shepherd together in one phrase, nor is it a phrase outdated by time. As American soldiers man their outposts on the periphery of freedom today, they are, in a very real sense, shepherds of freedom. With their Allied brother-in-arms, they constitute a primary deterrent to aggression and furnish visible, compelling evidence of our national determination to fulfill our responsibilities and commitments in the collective defense of the Free World.

No member of our fighting Army more clearly symbolizes these shepherds of freedom than does the Infantryman. It is he, perhaps best of all, who personifies the importance of the individual member of the Army team. It is he, lonely but vigilant, on guard in a time of uneasy peace, who in the final analysis is the essential element of our power to deter aggression. As the Infantryman stands guard from the hills of Korea to the fringes of the Iron Curtain in Europe, he exemplifies this vital truth: man is not only the ultimate weapon in waging war, but also the ultimate power in maintaining peace.

In the momentous days that lie ahead of us, we must ensure that our power for peace is kept at peak strength. Our moral and material preparedness, individual and collective, must be sufficient to meet any challenge. With the dedication and devotion to duty demonstrated in the past by the Infantry and its allied combat arms and supporting services, I am confident that this can, and will, be done.

Wilber M. Brucker

WILBER M. BRUCKER
Secretary of the Army

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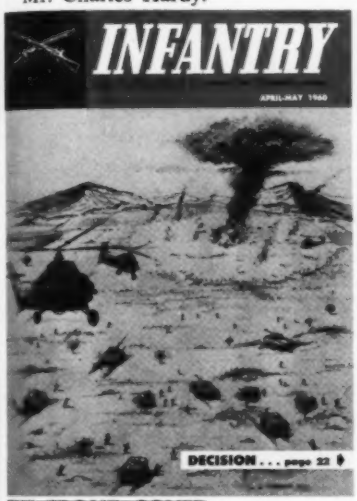

THE FRONT COVER

The shape of things to come dominates this issue's cover as it dominates all the Army's endeavors. Amid the confusion of change and the uncertainty of the future, one thing, at least, is clear. The Infantryman, to maintain his traditional dominant role on the battlefield, must learn to fight in the shadow of the mushroom cloud. Cover by Pfc Joseph Giordano.

THE BACK COVER

Ninety-five years ago this month the guns fell silent at Appomattox. Excerpts from *A Stillness at Appomattox*, written by Bruce Catton and published by Doubleday, coupled with sketches by Pfc John S. McLachlin, vividly portray the pathos of that day.

INFANTRY

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OFFICIAL PUBLICATION

UNITED STATES ARMY INFANTRY SCHOOL

Vol. 50 April-May 1960 No. 3

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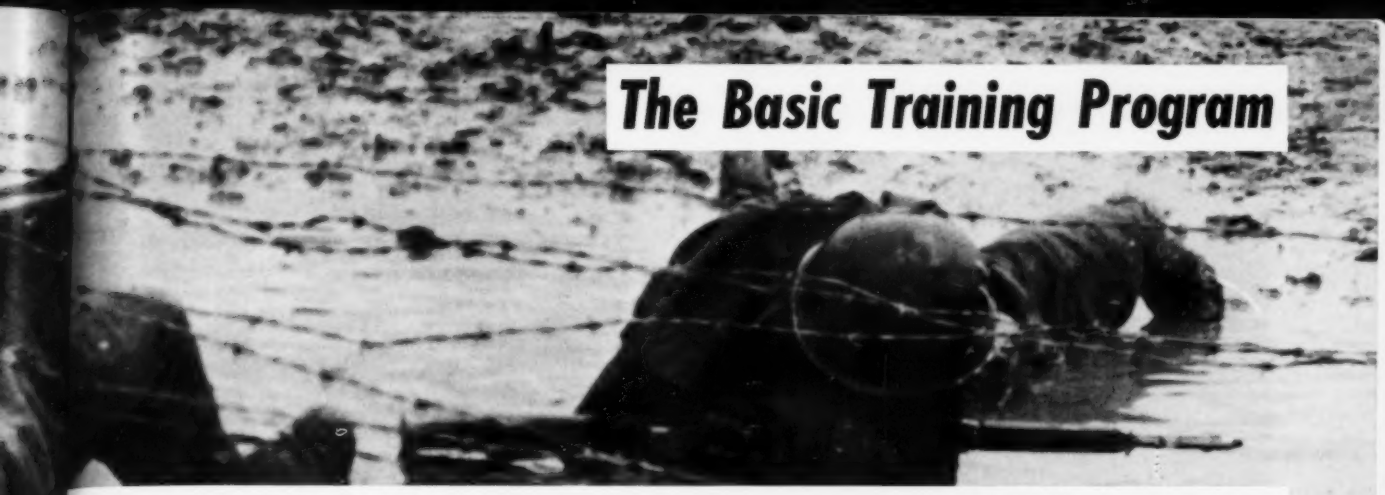
Infantry's mission—As an official publication of the United States Army Infantry School, *Infantry* magazine has the mission of providing current doctrinal information on Infantry organization, weapons, equipment, tactics and techniques. Additionally, *Infantry* has the mission of providing information, through controversial and thought-provoking articles, on new developments and doctrinal trends, thus serving as a forum for progressive military thinking.

Published bimonthly by the United States Army Infantry School, Fort Benning, Georgia. Entered as second-class matter June 11, 1948 at the post office, Columbus, Georgia, under the Act of March 3, 1879. Subscription rates: permanent subscription, $9.00 payable every 3 years; 2 years, $6.00; 1 year, $3.50. Six copies a year. Foreign subscribers other than APO addresses add $.60 yearly for postage. Address subscription applications to BOOK DEPT., USAIS, P. O. DRAWER F, FT. BENNING, GA.



The Basic Training Program

CORNERSTONE FOR COMBAT POWER

A forthright analysis of one of our most perplexing problems—the training of the basic soldier.

THE SUBJECT MATTER OF THIS ARTICLE HAS BEEN DISCUSSED WITH THE *Infantry* ADVISORY BOARD. THE BOARD DOES NOT NECESSARILY AGREE WITH ALL THE VIEWS PRESENTED, BUT IT CONSIDERS THE ARTICLE OF MAJOR IMPORTANCE, AND RECOMMENDS THAT IT BE READ BY ALL INFANTRYMEN. VIEWS OF INDIVIDUAL READERS ARE SOLICITED AND SHOULD BE SENT TO CHIEF, DOCTRINE PUBLICATIONS OFFICE, UNITED STATES ARMY INFANTRY SCHOOL, FORT BENNING, GA.

TO BRING *Infantry's* readers abreast of a problem which besets the Army's planners at all levels, *Infantry* presents a progress report—a report which, by its very nature, will arouse controversy and challenge, but which deserves the attention of every soldier and citizen since it deals with the Army's most expensive commodity—other than the man himself—*training time*.

Basic training, the cornerstone of combat power, has received and is receiving a searching analysis to determine its present effectiveness and its future potential. As a part of this continuing analysis, comments have been obtained from Infantrymen around the world—ranging from senior Advisory Board Members to company commanders of basic training units. These comments, as reflected in the following paragraphs, indicate where we are and where we are going. In essence, they reflect our progress in meeting and solving one of our most perplexing problems—the training of the basic soldier. The purpose of this article, then, is to highlight these training problem areas in the hope of stimulating constructive thought toward their ultimate solution.

THE PROGRAM OBJECTIVE

In an analysis of any training program, it is necessary that we understand its objectives. In the case of individual training, these objectives are clear-cut. Basic combat training (BCT) is designed to train the enlisted man in the fundamentals of soldiering to include basic Infantry formations and battlefield survival, thereby preparing him for the subsequent advanced individual training (AIT). The ultimate objective of AIT is to qualify the individual soldier in a military occupational specialty (MOS).

These objectives are currently accomplished within the framework of a 16-week cycle—eight weeks of BCT and eight of AIT. In the case of Infantrymen, AIT is designed to qualify them in MOS 111 (light weapons) or MOS 112 (heavy weapons). Soldiers of other branches receive their AIT through service schools, specialist training or on-the-job training. Thus, the individual training program meets the requirements of Public Law 51 in that it provides each non-prior service soldier with a minimum of 16 weeks of military training before he is sent overseas.

This, then, is how we train basic soldiers in peacetime. At this point it might seem that there is little more that could be said about the program beyond the fact that it "trains individuals." At closer glance, however, we find that it is not all that it might be. While this program seems to be sound and adequate, there are, in fact, many problem areas that are still controversial and unresolved—or in the process of being resolved.

PROBLEMS IN BCT

New Weapons

For example, in basic combat training there are at least three specific problem areas which come to mind. The first of these is in the soon-to-be-solved category. It involves the problem generated by the issue of 7.62 mm weapons. Since the period of transition from old to new weapons will cover a considerable span of years, it

Land navigation, added to basic training in 1960, will increase the soldier's battlefield effectiveness.

is apparent that the training base must provide replacements trained in both .30 caliber and 7.62 mm weapons. To resolve this, USAIS has recommended training with the M14 rifle while continuing training with the M1 rifle. It is envisioned that additional hours will not be added in BCT for M14 training, but that it will be conducted concurrently with M1 training.

Land Navigation

Another problem—now resolved—concerns the subject of basic map reading. Since 1956, the program of instruction for BCT has not included training in this subject. However, early in 1960, a course in Land Navigation was added to basic combat training. This 12-hour course was a result of considerable study by the US Army Human Research Unit at Fort Benning. It includes the training of an individual to navigate on land by a combination of two techniques—dead reckoning and map terrain association. The 12 hours for this course were made available by reducing the hours devoted to rifle marksmanship and close combat training.

Training on our old weapons must continue . . .

Proficiency Testing

Still another problem in BCT concerns the proficiency testing of individuals at the end of the eight-week cycle. While the Army Training Test directs retesting for those individuals rated unsatisfactory, the test is given in the last week of training, and adequate time for retraining and retesting is often not available. Perhaps provisions should be made for retraining and retesting these individuals during the two-week leave time between BCT and AIT or during the AIT period. This would serve a two-fold purpose: it would provide motivation to the individual and would ensure that he is fully qualified to go on to AIT.

PROBLEMS IN AIT

New Weapons

When we delve into the intricacies of the AIT program, we find problems similar to those of BCT. For instance, the introduction over an extended period of such weapons as the M60 machinegun, Davy Crockett and the SS10 antitank guided missile will pose a "phase-in" problem similar to that mentioned regarding the M14 rifle. Recommendations have been made for immediate "phase-in" familiarization training with the M14 rifle w/bipod and the M60 machinegun. It is anticipated that, as other new weapons are issued to training centers, similar action will be taken. Moreover, since the addition of 4.2-inch mortars to the Infantry TOE, a requirement has been generated for training personnel with this weapon. Accordingly, USAIS has recommended that this be accomplished by combining 81mm and 4.2-inch mortar training into a single program known as "Infantry Mortar Qualification."

MOS Saturation

Although steps have been taken to resolve the "phase-in" problem of new weapons, there is one other closely related problem which deserves further attention. Since most of these new weapons are heavy weapons, we find a saturation of MOS 112. For example, an individual with this MOS is *now* expected to be proficient with the 81mm mortar and the 106mm recoilless rifle. When we add to this the requirement for proficiency in the 4.2-inch mortar, Davey Crockett and the SS10 ATGM, we are in danger of having heavy weapons Infantrymen partially qualified in all weapons but adequately qualified in none. A positive solution for this is to eliminate MOS 112 and to create in its place two MOSs related to indirect and direct fire weapons. It should be noted that this matter is now undergoing further study.

Individual Qualification

The MOS problem is, in turn, directly allied to the requirement that the heavy weapons Infantryman be qualified in more than one weapon. Because of the limited training time available, it is unlikely that the basic soldier can readily assimilate the necessary knowledge and skill in these weapons to perform with the speed

and accuracy required for combat. While some advocate that these skills may be increased during subsequent unit training, we find in these programs practically no training which will improve the capability of the individual to fire these weapons with desired battlefield proficiency. And, of course, we have no guarantee that we will have the time for this additional training after AIT. As General Bruce C. Clarke points out: "With weapons of immediate and widespread destruction, the pace of battle may never again permit gradual seasoning of units under fire." Perhaps, then, the best solution would be to concentrate the training of an individual on one weapon during AIT with only familiarization in other heavy weapons. In any event, we *must* ensure, as we are now doing, that our training remains abreast of the new developments in weapons and tactics.

GENERAL PROBLEM AREAS

Cadre Personnel

There are, of course, several general problem areas which relate to both the BCT and AIT programs. Since the effectiveness of our training program is in direct proportion to the quality of training cadre, one of the most critical problems is that of obtaining and retaining qualified cadre personnel. While this is an age-old enigma, nonetheless it still exists. As some of our senior commanders have pointed out, there is a continuing shortage of qualified cadre personnel in training centers and training divisions. This shortage is evident in quantity and quality. In some instances, newly commissioned officers or untrained NCOs are assigned to these critical positions with a resultant decrease in training efficiency. Moreover, the individual gains his first impression of military life during basic training, and we must therefore endeavor to ensure that this first impression is a good one. Whether we resolve this by assigning a higher priority to such training assignments or by placing additional cadre personnel on stabilized tours remains to be seen. Perhaps we might even develop, through NCO schools and similar training, a type of NCO similar to the British Drill Sergeant. Perhaps we might even provide greater incentive for this type of duty. In this respect, Career Management recently reiterated that command of training center units is considered in the same light as command of tactical TOE units. Certainly this is a step in the right direction toward increased incentives and obtaining and retaining a better cadre.

Housekeeping and Administrative Details

Closely related to the cadre problem is the matter of housekeeping and post administrative details that invariably detract from the training program. In spite of the fact that many commanders recognize that this housekeeping burden has a deleterious effect on our training, no plausible solution has yet been found.

Resolving this dilemma is not easy, particularly in view of limitations in funds and personnel. However, it would seem that some solution such as the use of troop support units should be found. Perhaps there is a need for setting aside a "detail week" in which the unit does nothing but perform details for itself and other training units. This has been found to be a workable system in the Marine Corps and may merit further study on our part.

The addition of the SS10 to our arms inventory points up the complexity of modern AIT.

Combat Realism

Another general problem involves combat realism. From comments received from the field, it is evident that we must take more positive steps in preparing our basic soldiers for the nuclear battlefield. We must approach the mental and physical stress which soldiers will undergo in combat. If we can do this by simulating the sight, sound, smell and isolation of the nuclear battlefield, we will be money ahead. Perhaps case-study films would provide a partial answer in depicting battlefield environment. We might even integrate an element of controlled discomfort in our training to prepare the

. . . while we integrate newer weapons into the system.

individual for the stress and hardship which he will most likely encounter on the battlefield. Of course, this would have to be approved by DA and would have to be closely controlled. One other improvement might be realized by reducing some of the stringent safety restrictions for overhead artillery and mortar fire. Suffice to say, some means must be found to induce combat realism in our training.

Length of Training Cycle

One additional problem area concerning individual training (and also one of the most controversial) relates to the length of the training cycle. Although this problem was the subject of considerable study during World War II (when the entire basic training cycle varied from 6 to 17 weeks), we are still searching for ways to reduce the lead time for the effective combat soldier.

In 1959, a 14-week training program (BCT and AIT) was developed and tested at Fort Dix, New Jersey, to determine the feasibility of adopting this abbreviated program on an Army-wide basis. The program was designed to eliminate the non-essentials and to concentrate on those aspects of training which were considered most important. This accelerated course, which is being held for possible later use, was believed to give us a product comparable to that produced by the current 16-week course. In this regard, while it appears feasible to reduce the training time in an emergency, it is believed that the existing 16-week program is best suited for our current *peacetime* needs. Nonetheless, we must still continue to strive for means of producing a better soldier in less time.

Program Content

To do this, perhaps changes in program content are required. Many commanders strongly advocate increased emphasis on such fundamentals as patrolling, physical conditioning, mine warfare training, dismounted drill, night training and first aid.

The difficulty in adding subjects to any program is the lack of time. We must crowd only the essential elements into sixteen 44-hour weeks. If we add more patrolling, as an example, some other subject must be reduced, since any overall increase in the amount of material we present to the trainee may push him beyond the point of diminishing returns. In this regard, the best solution appears to lie in the realm of integrated training. And of course there must be a trend away from unnecessary after-duty parades, unnecessary post beautification projects and the like. Our goal should be a well-trained soldier *and nothing else*.

Reserve Components

In any modification of the training program, we must bear in mind that a large number of our trainees are RFA personnel who will be on active duty for six months before returning to their Reserve component unit. Since approximately 36 percent of our overall replacement training involves RFA personnel, we must ensure that any program alteration takes cognizance of this fact. In view of the large number of Reserve component personnel being trained (approximately 90,000 RFA men per year), we must aim our training sights at this group, and recognize the fact that their training efficiency retention may be somewhat different than that of an individual who remains on active duty for two years. Indeed, as the One Army concept emphasizes, we have important responsibilities to the Reserve forces in this regard, since they constitute the bulk of our mobilization base.

Motivation of the Individual

One final general problem concerns motivation of the individual during training. It is paradoxical that, in our largest training effort, we place little emphasis on competition to achieve high scores in *all* basic training subjects. Since the soldier who barely qualifies is given the same prerogatives as the particularly well qualified individual, this sometimes engenders mediocrity. Perhaps a series of rewards (i.e., promotion, preferential assignment, etc.) to the top half of the basic training group

The 106mm rifle, as well as the other heavy weapons, is slighted in our present broad-brush training program.

4.2-inch and 81mm mortar training may be combined in a USAIS-recommended program called "Infantry Mortar Qualification."

would stimulate greater individual effort. Additionally, consideration should be given to payment of proficiency pay to those trainees who measure up to a set of extremely high standards. In any event, this is just one of the many areas where possible improvement might be made in the basic training program.

PROBLEMS POSED BY MOBILIZATION

Do We Have Time?

In any analysis of our training program, we must consider whether it meets the needs of general and/or limited war. Because of the possibility of either type conflict, it would seem desirable to develop a *single* training program geared to both eventualities. In such a program we would necessarily include only the minimum training required to produce an effective combat soldier.

To reach this end, we must therefore continue to re-evaluate our training programs in the light of rapid advances in technology. If such advances enable us to reduce training in basic subjects which have become obsolete, we should then take positive steps to effect this savings in training time. For instance, new surveillance devices might well reduce the need for extensive training in interior guard.

Once we have accomplished this re-evaluation, we must then adjust our present peacetime schedule to a wartime standard. For it is axiomatic that we may never again be afforded the opportunity of adjusting our training programs at the pace we did during World War II.

Reserve Training

One other mobilization problem that is equally critical relates to the type of training we will give to certain categories of reservists in an emergency. We must recognize that, in spite of the best efforts of the system, many reservists will require individual refresher training prior to joining a unit. Accordingly, we must develop a means of identifying these personnel and of retraining them. In this regard, we should develop a short refresher course of approximately two-weeks duration which would "refresh" and POR-qualify enlisted reservists who need this training. We might also use this mobilization refresher course for Active Army personnel who have "lost touch" by virtue of compartmented assignments (e.g., recruiting, ROTC and similar duty).

The important fact concerning all of these mobilization changes is that they should be made now, while we have the time, rather than during a war when time is at a premium. In the future, we will not be able to afford the instability and confusion which invariably come with hurried changes made during an emergency. For us, the emergency is now, whether we recognize it or not.

This, then, sums up the report on where we are—and where we are going. When we examine the basic training program, we can conclude that it is basically sound and efficient. It is also progressive in that it stays abreast of new developments. The end product of the program is acknowledged to be capable and efficient. Nonetheless, we would be remiss if we did not recognize that many problems still exist. While most of these have been touched on (and are being resolved), there are undoubtedly others that are equally as vital which have been missed. It is important, therefore, that we recognize these problems and solve them—that we subject our training program to a continuing and critical analysis, for we are dealing with the very cornerstone of our combat power.

What is equally important is that we are dealing with a most expensive commodity—training time. And if we spend this commodity recklessly or illogically, we may find—to our sorrow—that this priceless commodity has run out.

MORGAN wrote the MANUAL

'ROUND THE HILL RODE A COLUMN—

MOUNTED INFANTRY AND CONTINENTAL CAVALRY—

SLICING IN

BETWEEN THE FLOUNDERING ATTACKERS

Tarleton's British Regulars . . .

by Capt John Hinton Jr.

"I tell you the past is a bucket of ashes." Carl Sandburg

There is a feeling among some military men that the atomic bomb has invalidated prior experience and that the past is indeed a bucket of ashes —without substance or value—not meant to be stirred.

And yet (contrary to this belief), there is much to be learned from the past—nuclear weapons notwithstanding.

For instance, students studying the mobile defense (a very worthwhile tactic on the nuclear battlefield) can find no better example than the old Battle of Cowpens. One would almost think that the hero of this saga, Brigadier General Daniel Morgan, had written the modern manual on mobile defense.

It was in January, 1781, when Morgan wrote the first chapter in the book. His aggressive actions in South Carolina had forced the British hand; as a result, General Cornwallis dispatched a sizable force (under British Lieutenant Colonel Banastre Tarleton) to destroy Morgan.

Tarleton was a cavalryman famous for the ferocity of his attacks against American colonial troops. In fact, his most notable successes had been against American militia and guerrillas. When he was dispatched toward Cowpens, he led a balanced force of dragoons (mounted Infantry) and his own cavalry legion, plus elements of the 7th Royal Fusiliers and 71st Highlanders. Thus, in moving toward the American force, which was known to be light in Continental troops but heavy with irregulars, he acted with gusto, anticipating another triumph.

From Pickens' South Carolina guerrillas, operating as his reconnaissance and security screen, Morgan was kept informed of Tarleton's progress. Since a large portion of Morgan's force was composed of raw militia, he was understandably ap-

. . . no match for the slashing American counterattack.

prehensive about the inevitable engagement and sought to evolve some plan that would give his troops an advantage which would tend to counter their inexperience. In a war in which success depended on the unyielding defense of terrain against massive bayonet and musket assaults, American militiamen had thus far been spectacularly unsuccessful.

Morgan, acutely aware of this defensive weakness of his militia, finally decided not to attempt a static defense with them. Instead, he located a piece of ground immediately north of the Pacolet River called Hannah's Cowpens which would permit him to dispose his force and execute a plan that, even today, is considered revolutionary. This was the beginning of his mobile defense.

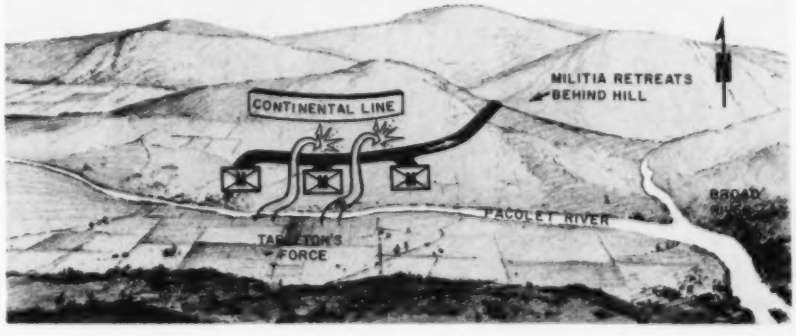
Once his men were positioned, Morgan spent the night of January 16th moving among the militia units which occupied his forward positions, carefully explaining that their sole mission was to break up the initial attack and draw it onto the first hill in the area. He also specified that they were to stay only long enough to fire three volleys. Then they could regroup behind the Continentals, who would be in a blocking position on the hill (Figure 1). To ensure that his militia units broke contact before they became closely engaged, he even specified their route of withdrawal around the east side of the hill.

To Morgan, "massive firepower" meant the precision-drill broadside musketry of his Continental regulars; he figured that "massing the enemy into a lucrative target" could only be done *offensively* by slamming them into a killing zone and penning them there by an attacking force. This, of course, meant an aggressive and highly mobile reserve.

Morgan had no tanks (as we do in our modern mobile defense), but he had the earlier-day counterpart in Colonel William Washington's cavalry. If he could somehow "beef up" this unit, he'd have a potent striking force in reserve. Classically, Morgan attached mounted Infantry to his reserve; on the night of the 16th, he directed that volunteer Infantrymen be authorized to "press any horse not belonging to a dragoon or officer" and report for mounted service with the cavalry behind the hill. When all of these defensive elements were in position, Morgan's mobile defense was ready—and the first chapter in the book was complete.

As Tarleton crossed the Pacolet early on the morning of the 17th, his mounted lead elements received light small arms fire from shabbily clad figures who, having fired one or two volleys, scrambled back into the meager growth of trees to their rear. This affirmed once more to Tarleton's men that guerrillas never stayed

Figure 1. Tarleton's thrust met early success.



MORGAN WROTE THE MANUAL

to fight and caused the British horsemen to move from the north bank of the river at a trot.

On the north side of the river, they found observation to be excellent. Trailherd cattle, pastured here in the Cowpens, had been cropping the foliage down to the forest floor for decades. Thus, the cavalrymen could readily observe a force of nondescript troops in defensive positions a couple of hundred yards to their front. And, as the cavalry continued to move toward these troops, they received a hesitant volley of fire from the militia. Breaking into a gallop, Tarleton's troopers began what they thought would be another incident in their familiar sport of militia-chasing. In the meantime, the militiamen had managed to reload their muskets and delivered a second sporadic volley into the charging horsemen.

British Infantry, having heard the firing ahead, had, by this time, crossed the river and were running to join their mounted brothers in the assault. There was a final spurt of erratic fire by the Americans as they stumbled toward a rise to their rear. Once the militiamen reached the hill, they streamed around it to the east and the field was left clear.

Tarleton's cavalry hooted a yell of derision for the fleeing militia as momentum carried them onto the slope to the front. Then it came—they were answered with an Indian yell and musket fire—not ragged militia volleys this time, but a single thunderclap of muskets from Morgan's Continental line (Figure 2).

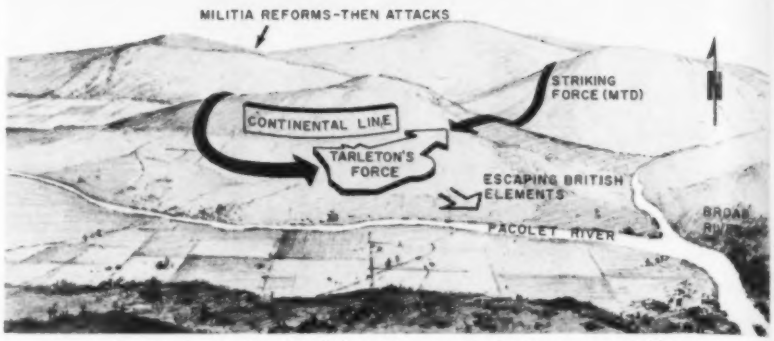


Figure 2. Tarleton's "pleasant romp" became a crushing nightmare.

The British cavalry buckled. Behind them, advancing foot troops cursed and clubbed their way into formations of recoiling horsemen. For a moment, the British Infantrymen fought clear of their own cavalry and squared to meet the bayonet charge pouring down the hill to their front; but pounding around the hill (from the same corridor through which the militia had fled) rode a column of Continental cavalry and mounted Infantry, slicing in between the floundering attackers and the Pacolet River.

The bewildered British, with a bayonet rush coming to their front and cavalry mopping up their right and rear, had just time for a glance to their left. A horde of militiamen, the same ones who had just "fled," swarmed around the opposite side of the hill—and the fight was over. This was the mobile defense—and the manual was complete.

Certainly Tarleton was no incompetent; he had simply ridden into a nightmare. For Morgan, seeking to avoid the traditional defense he knew his force could not support, came up with an ultra-modern plan. The principles applied there were the same ones advocated today:

A lightly held forward area; a delivery of massive firepower; and a highly mobile counter-attack to destroy the enemy rather than to hold ground—these were the elements of victory at Cowpens. General Morgan battle-tested them for us two centuries ago.

Change the scenery, the weapons and the people, and the lesson remains as testimony that the future is but a mirror of the past. Indeed, the lesson is as clear today as it was 179 years ago . . . when Morgan "wrote the manual" for mobile defense.

CAPT JOHN HINTON JR. is a 1951 graduate of the United States Military Academy. After completing the Basic Infantry Officer and Airborne Courses, he served as a platoon leader and company training officer at Fort Ord. In 1952 he was assigned to the 27th Infantry Regiment in Korea where he was a platoon leader, company executive officer and battalion adjutant. Upon his return to the United States, he performed duty with the 504th Airborne Infantry Regiment as a company executive officer and company commander. He later attended Columbia University and obtained his MA degree. Captain Hinton was subsequently assigned as an instructor in the Department of English at the Military Academy. At the present time, he is attending the Infantry School's Advanced Course.

TRICKS OF THE TRADE

by Ranger John

CHECKPOINT CHART

Field conditions make the use of overlays and maps difficult at best. Moreover, when acetate overlays are marked with grease pencil, the result is often far from satisfactory.

Let's assume that you are from the grease-pencil acetate "school" and are working for a commander who delights in controlling movements by use of check points.

It has been hours since you marked the check points on your map case with grease pencil and most of the markings now adorn your field jacket. Then, at a harried moment, comes the frantic radio transmission: "Move your unit at once to check point 27." You search in vain for check point 27 . . . Ah! There it is—on your right forearm—Embarrassing isn't it? To keep this from happening, why not try the easy solution below?

Here is a cure for your map ailment. Fasten cloudy acetate (rough side up) to your map with small strips of scotch tape, then place your information on the acetate with a soft lead pencil. You can read the map through the acetate and can make additional notes when they are needed. These same pieces of acetate also work well in consolidating platoon and company fire plans. In the event of possible capture, the user may destroy the acetate with the touch of a match.

THE "SEE-MORE" COMPASS

Having trouble at night seeing the luminous dots on the cover of the lensatic compass? A strip of luminous tape, 1½ by ¼ inches, affixed on either side of the sighting wire slot, will solve the problem. To use this expedient you simply align the north arrow under the long luminous indicator and then determine the direction to be followed by drawing an imaginary line between the strips of luminous tape. Furthermore, you can hold the compass away from your body so that it will be unaffected by your weapon or other metal equipment.

SHOULD WE COMBINE

Make Way For Progress

by Capt Iconoclast

An examination of the future unit shows that it will be an *integrated* fighting team.

"The Army is slowly approaching a branchless organization. We are a 'combat team' Army. It is a trend which I think we should not fight, but gradually deemphasize branch consciousness." This recent statement of General Bruce C. Clarke was made in the wake of the Army's reorganization based on the pentomic concept.

To some, the thought of a "branchless organization" or a "combat team" Army might suggest a loss of branch identity, a lowering of esprit and a loss of branch prestige.

This, however, is not true. The trend toward a true "Combat Team" is only another step toward a more effective, more potent, modern Army.

As a first step toward true battlefield effectiveness, the Army developed its pentomic concept to combat the potentially devastating effects of nuclear weapons on its organizations. Those who developed and approved this concept decided that the Army must have an organization which is adaptable to nuclear and/or non-nuclear warfare and which is capable of absorbing the progressive introduction of new weapons. Additionally, it was recognized that we must have organically compact, relatively light and mobile forces as well as a simplified command structure enhanced by improved communications and mobility.

The pentomic reorganization accomplished these goals and resulted in an improved, more potent combat force. Again it was but a first step in a necessary evolution—but it was indicative of things to come.

Another necessary step forward is combat arms integration—the amalgamation of all combat branches into a single effective Combat Branch or Combined Arms Branch.

The need for this amalgamation is long overdue; without it, the pentomic reorganization is robbed of part of its potential effectiveness. For even if we have the adaptable, compact, light, mobile organization previously spoken of, it can be no better than the men serving in it. And if these men are specialists, hidebound to a single capability, then we lose much of the flexibility and adaptability which the future battlefield may require.

This is why we need a Combined Arms Branch.

To some, the first reorganization (ROCID) slighted the long and proud traditions of our fighting units, particularly the Infantry regiment. This was one of the arguments advanced by "die-hards" who did not want to face the fact that the old regiment was not able to survive on the nuclear battlefield. These branch purists raised a hue-and-cry about losing identity with the traditional units, lower morale and other related ideas. What they failed to consider is that we can no longer afford the luxury of judging an idea solely on its past merits. Just as we judge an individual by his ability (not that of his father—or his father's father), so too must we consider our combat units in the same light. We must judge them for what they can do today, and not by what a group of men banded together in the past have done.

While this break with tradition may sound like heresy to some, it was also heresy to old troopers of 30 years ago to mention putting the traditional and time-honored war-horse out to pasture. And it was these same tradition-steeped horse-soldiers who represented one of the big stumbling blocks in getting motor vehicles to the fighting units; forty years passed from the time the Army purchased its first vehicles until they appeared in the companies. And today, we cannot wait 40 years to change what must be changed.

The current pentomic organizations are only a major step toward the type forces we need and which are coming.[1] At times it is difficult for a person, enmeshed in day-to-day problems, to keep this thought foremost. These first pentomic organizations are only the beginning, not the end. The Army recognizes that it will be highly desirable to have a single-type division which has the air-transportable characteristics of our current Airborne division *and* the capability for sustained ground combat now inherent in our Infantry and Armored divisions.[2]

Looking a little deeper into this concept to which the Army is committed, one finds future fighting units described as small, integrated fighting

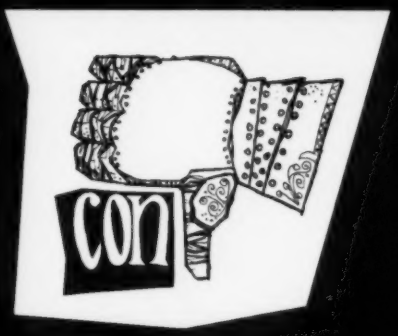
(Continued on page 16)

1 Eddleman, C.D., "Pentomic Reorganization—A Status Report" Army Information Digest, Sep 58, p. 3

2 Army Information Digest, Jun 58, p. 41

THE COMBAT ARMS?

Little To Gain—Much To Lose



by Capt Harold J. Meyer

Do we want a group of specialists—partially trained in everything and completely trained in nothing?

Will the integration of combat arms lead us down the road to confusion, lowered morale, wasted funds—and unpreparedness? This is one of the many questions that arise whenever a discussion is held relative to combining Artillery, Infantry and Armor into a single combat branch.

To many, the very discussion of such a plan may come as a surprise—and yet it is being given serious consideration. It was, for instance, one of the agenda items at the recent Combined Arms Conference. In view of this emphasis, therefore, it is only appropriate that we take a "long look" at the entire problem of combat arms integration.

"Centralization and compactness" has, unfortunately, become a magic symbol (at least in theory) of increased efficiency and combat power. It has also been theorized that the problems of nuclear ground warfare can be magically resolved by replacing the three traditional arms with a single ground arm which would be known as the Combat Branch.

In brief, as I have heard one proponent of the Combat Branch explain it, Infantry, Armor and Artillery as separate branches would cease to exist. A composite arm, to be known as the Combat Branch, would be organized from them. This unification would provide for combat specialization during the beginning years of an officer's career, some cross-training after a few years of duty and finally, advanced training in task force and combat command operations. The scheme would also include combat specialization fields (Infantry, Armor and Artillery) within the Combat Branch; however, it would be expected that *each* individual would, in time, be trained to fill positions *in all three* specialist fields. In effect, this plan would require each officer to have an all-around capability which would enable him to serve in an Artillery, Armor or Infantry unit.

I, for one, sincerely doubt the soundness of any proposition that would require Infantrymen to learn the additional detailed skills of Armor and Artillery. By the same token, I know that the Armor branch has little time to spend on the acquisition of other skills and techniques of distinctive ground fighting. Additionally, I do not believe that the Artilleryman should be made to concentrate on anything but Artillery. Nevertheless, there remain many officers who zealously advise as to the necessity for having a single homogeneous branch.

When an objective analysis of this entire proposal is made, however, it becomes apparent that more will be lost than gained by such a move. To prove this point, let's examine some of the more publicized purposes for amalgamating Armor, Artillery and Infantry into a Combat Branch.

"Branch bickering" is advanced as a reason for combining the three principal combat arms. Supposedly there exists a situation (caused by branch consciousness) wherein the members of the arms are ready to turn their weapons on each other. However, it has been my observation that no serious bickering exists to the detriment of the Infantry or Armored divisions (which are made up of individual arms and services). In fact, I have never witnessed anything but the finest cooperation among members of the three major combat branches. Of course, I have listened to junior officers argue for long hours as to the merits of their particular branches. Yet I have never heard arguments that were anything but friendly, and they usually ended with a better understanding of the problems of each branch.

Closely allied to branch bickering is the problem of overlapping functions. To understand this problem, we must remember that the entire organization of the Army is based on arms and services; and, as in the technical services, each combat arm is tailored to perform an essential combat function. We know that it requires the united effort of all arms and services to win battles. No single branch is capable of adequately performing the functions peculiar to the others.

But some overlapping of functions is obvious, and this has provided the occasion for some peacetime dispute (There has seldom been any branch bickering when we faced the enemy). Minor overlapping of roles creates a situation in which branch competition can sometimes be a source of irritation. When viewed in its proper perspective, branch competition is good. It breeds new ideas and new approaches. Competition, after all, is the soul of progress. Integrate the combat arms and this progress will slow or stop; the net result will be a limp and unmotivated force. If we integrate and cause the branches to be specialist fields, then one of the alleged purposes

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Make Way for Progress

teams possessing a high degree of mobility and a nuclear punch. How large or small these units will be is anyone's guess. However, it is reasonable to assume that these units will be approximately company-size. An examination of the future fighting unit shows that it will be an *integrated* fighting team. It will have a high degree of mobility, initially obtained by land transport and, in the more distant future, by some aerial vehicle. Conventional fire support will be replaced by more accurate rockets and missiles possessing nuclear and non-nuclear capabilities. The commanders of such units must have the knowledge and experience to lead and employ these teams skillfully. The capability of these new fighting organizations will depend on their leaders' ability and intimate knowledge of the specialties which go into the make-up of these teams. The current combined arms training approach is not the vehicle to gain this insight into the very bowels of the integrated team. It will be gained only with the "generalist" approach and with living with such a force day-in and day-out. It will be gained only by serving in a Combined Arms Branch.

At this point, it must be stressed again that the single-type division is not a pipe dream. This concept, with its small, potent, integrated fighting teams, has been announced as a desirable goal of the Army. As the Army moves toward its goal, we find that with each new development the clear-cut lines of traditional branch distinction become blurred, and the original reasons for branches become obscured. For example, the Infantry wants an armored personnel carrier which is also an armored fighting vehicle. Will the commander of a unit which has these vehicles be Infantry or Armor? Certainly, he would not have much in common with the traditional Infantry of old—the foot soldier. Or, take another example—the problem of the 4.2-inch mortar—and who, the Artillery or Infantry, will have the responsibility for it. In the final analysis, it really doesn't make much difference who shoots the weapon; the main point is that it *is* done.

There are many examples where two or more of the branch schools, as spokesmen for their branches, have gotten into seemingly senseless squabbles while vying for money, recognition, or branch supremacy in a particular field. Would not the energy which was spent in settling these branch conflicts have been better expended in determining the ways and means to improve our Army as a whole?

As time goes on, more of these overlapping areas will develop. The Infantry and Armor will probably require weapons that were once strictly within the domain of the Artillery. Likewise, Armor will want airmobile Infantry-type units, while the Artillery will require organic Infantry to survive in the nuclear arena. Thus, we have another strong argument for a Combined Arms Branch.

There is always the person who voices the cliché about being a jack-of-all-trades and the master-of-none. Today, in each combat arms branch, knowledge which overlaps into another branch's domain is required. The mortarman is essentially an Artilleryman whether he admits it or not. The M56 antitank weapon used by the Infantry requires armor-type knowledge of gunnery and maintenance. And each day doctrine of Infantry and Armor comes closer together. Thus, integration is already pretty much an accomplished fact. What we need now is solid recognition of what has already come to pass.

It is worth mentioning that the "line officers" of the Navy are, in effect, in an integrated combat arms branch while the enlisted men remain in the various specialty fields. Each line officer must be skilled in gunnery, engineering and navigation as well as command. He may be called on to serve in any of these capacities on any type ship—from aircraft carrier to destroyer. Certainly, our combat arms specialties present no more diversification of required skills than do those of our sister service. Following this train of thought, one of the pentomic concept planners wrote, "There will be no place in the Army of 1962 for the exponent of the single combat arm or the single service, or for the individual whose interest and knowledge have not progressed beyond the confines of his arm or service. The desirable individual—the one who survives, the one who contributes, and the one who wins on the battlefield of 1962—will be the individual whose vision, education and training equip him for varied tasks in a diversified Army."[3]

To the dispassionate, analytical observer, the current trend toward a Combined Arms Branch should be obvious. One has only to read to realize that it is but a matter of time until the separate combat arms branches are amalgamated into a Combined Arms Branch. In this regard, we should not be bound too much to the past. We *must* make the bold changes which are necessary to keep pace with rapid technological developments, and certainly the integration of combat arms is one change that is necessary for battlefield effectiveness.

Like everything else done in the Army, the formation of the Combat

CAPTAIN ICONOCLAST is the *nom de plume* of an experienced Infantry officer presently assigned to USAIS. The author is a graduate of the Advanced Course and the Command and General Staff College.

3 Bogart, T.F., "Organization and Training—1962 Model" Army Information Digest, Jan 58, p. 64

Arms Branch will be a gradual thing—some people will even classify it as insidious. As the Army organizes and again reorganizes toward its stated goal, this process will be taking place. Just as the pentomic concept is being implemented step-by-step, so, too, must we adjust our thinking to playing on the same team, with each striving for a common goal. We must subordinate—yes, even submerge—the proud traditions of branch to the pride-evoking tradition of the United States Army.

Future battles are to be fought by the organizations which already have been devised. The die is cast and we are committed to the pentomic concept with all that it embraces. There will be no "Billy Mitchell" or "Liddell Hart" needed to herald the approach of the Combined Arms Branch. As sure as the pentomic concept is a reality, so too will the Combined Arms Branch come to be.

The handwriting is on the wall; only the myopic can fail to read.

The opinions expressed in this article are those of the author and do not necessarily reflect official thinking of the Infantry School.

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Little To Gain—Much To Lose

of consolidation—the elimination of branch bickering—will certainly not be accomplished. All we will be doing, in effect, is making another echelon for red tape, another reason for unneeded staffs and headquarters, while, at the same time, we are eliminating the individual combat arms—one of the soldier's few remaining links with tradition and esprit. When we lost the term "regiment," a good share of the Army's tradition went with it. We must ensure that what little tradition remains does not disappear with the combat arms. If it does, it will indeed be a sad day for the Army—and the nation.

Be that as it may, it is still theorized that a merger would provide a universal type officer—universal in training and experience which would provide the technical capability for leading Armored, Infantry or Artillery units. While it cannot be denied that some cross-training is imperative to battlefield success, the demands of the specialties and branch functions place a prohibitive barrier to the amount of time that can be given to it.

For a moment, give consideration to any integration plan wherein the Artilleryman of today must develop a triple-threat capability. Obviously, it would be preposterous to ask that an Artilleryman be equally adept in a battalion of Armored Infantry, an Honest John battalion or an Infantry battle group. As an analogy, why not have the Quartermaster build bridges and lay mine-fields so that we might eliminate the Corps of Engineers? Or is the Artilleryman any less a specialist than the hypothetical Quartermaster? I think not. And as an Infantryman, I know that the techniques of Infantry are too precise to permit me to pursue, honestly and extensively, the specialties of either Armor or Artillery. What we would have, if such were the case, would be a group of "specialists" partially trained in everything and competently trained in nothing.

The problem of "specializing" brings to mind the fact that the Army effort is a genuine team effort. In that respect, we are much like a baseball team—where the coordinated efforts of many "specialists" are required to produce a winner. No one would argue that we should field a baseball team consisting of nine non-specialists—where every player is equally qualified as a pitcher, catcher, outfielder and infielder. It would be ideal to have a team of these well-rounded players, and yet it is just beyond the realm of human capabilities. The well-rounded team—the team that has a pitcher specialist and a third-base specialist (as well as others)—is the one that wins.

In this regard, the Army team is no different—except that the stakes in the game are much higher. From this analogy we can draw a compelling comparison: A team of specialists (experts in their own field, if you will) will always surpass a team whose players are qualified in everything—but expert at nothing.

Let's look at the Artillery for further insight. Artillery has attempted integration of functions within its own branch. Following World War II, in order to overcome the pressures of personnel economy (among other reasons), an integration plan was implemented. A so-called "obvious" solution was programmed and followed. Field Artillery and Anti-aircraft Artillery were consolidated—with disappointing results. Artillerymen who experienced this union recall the resultant lowered standards of training, wasted aptitudes and needless expenditures of personnel and money. Perhaps this was just another sad case of unneeded change for the sake of change.

In any event, Artillery has still been unable to overcome the requirement for specialization. An examination of the present school system reveals no integrated courses of study that produce an officer proficient in both Anti-aircraft (Air Defense) and Field Artillery. Today's complex artillery weapons and new developments in artillery techniques

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CAPT HAROLD J. MEYER enlisted in the Army in 1943 and graduated from OCS in 1945. He served in Europe until 1946, when he left active duty. In 1948 he returned to the Active Army. He has served as assistant PMST at Kent University and is a graduate of the USAIS Advanced Course. Captain Meyer is now publications officer with the Infantry School's Weapons Department. He is a frequent contributor to *Infantry*.

Fuel For Fighting Men

by Maj Clifford H. Reynolds

Changing concepts demand increased tempo in the pace of technology. Here is a report on the latest developments in feeding fighters.

IF TODAY's well fed American soldier were to try existing for one day on the rations of his 1896 predecessors, he'd agree we've come a long way in providing fuel for the fighting man.

Those hard-bitten troopers of the western frontier existed on a uniformly dull diet of hard bread, pea meal, roasted coffee and bacon—and it doesn't take much imagination to get a whiff of that bacon after it rode around in a saddle bag for a month. On the other hand, the old-timer would be overjoyed to try the pre-cooked, dehydrated chili and beans, instant rice, peaches in syrup, the ever present frankfurters with beans and the pecan rolls of our present menus. Indeed, we have come a long way—from pea meal to pecan rolls—and well we should, for the feeding of combat forces, present or future, is an important factor on the battlefield.

To provide this "fuel" to keep the Army moving, we have devoted intense effort and not inconsiderable sums.

Yet, an appraisal of existing feeding systems shows that they are inadequate in view of the markedly changed organizational and tactical concepts of the present and those proposed for the future. Our present feeding concepts (which are remarkably similar to those of World War I) call for as many meals as possible to be prepared and served by the kitchens of the combat forces. Realistically, however, outpost and other surveillance forces seldom receive hot meals.

Further, during the long summer days and short summer nights of temperate climates, problems crop up when units try to feed without betraying positions. Hours of darkness must be utilized for troop movements, repositioning of artillery and armor, evacuation and resupply. These activities leave little time for the feeding of troops under the cover of darkness if the commander is to accomplish all other necessary actions.

One of the major stumbling blocks is the need to cook most of our food. As it has for years, the Army makes use of a standard, clumsy, hard-to-conceal kitchen in the preparation of hot meals. This is necessary since most of the food consumed (i.e., Field Ration A) is the conventional type such as might be found in any civilian market. In some areas where refrigeration, transport and other facilities are limited, the Operational Ration B may be used. The B-Ration consists for the most part of heat-processed foods and a limited number of dehydrated foods, staples and condiments. Packaged rations normally found in the field consist of various survival food packets, assault food packets and the old "reliable," Ration, Combat, Individual, C. By and large, the concept of our present packaged operational rations is very little changed from that which originated with the development of the C-Ration in 1939.

These current feeding systems have been the object of recent studies to determine their adequacy in view of recent and proposed changes in organization and tactics. Predictably, the present system of feeding our armies under combat, or simulated conditions of combat, was found to be inadequate when considered in the light of the conditions likely to be imposed by nuclear warfare.

Figure 1. The interim replacement for the C-Ration.

As a result of this appraisal, coupled with breakthroughs in food technology (particularly in the field of dehydration), a modernized type of feeding has been proposed. Designers of this concept recognized the need for foods that would require only the barest minimum of preparation prior to delivery to operational troops. They also realized that the means must be provided to keep these foods in an acceptable condition until they reach the small combat teams that will be typical of the forward battle area. The criterion for the proposed system is *simplicity*—and, appropriately, the proposed feeding system of the future is named *Simplified Food Logistics*.

Basically, this system consists of three types of rations, including the Individual, "Quick-Serve" and "Unitized" Rations. In essence, they will replace the current A-, B- and C-Rations.

One of these new types, the Meal, Combat, Individual (Figure 1), has been developed and standardized. Still under development as a replacement for the Meal, Combat, Individual, is a meal that will require no preparation and will be called the Meal, Ready-to-Eat, Individual. The latter is designed to contain nutritional foods which are highly acceptable when eaten cold and which require no preparation other than opening the package and reconstituting a beverage.

Using the new rations, combat troops in the forward areas would be fed a combination of Quick-Serve meals and the Meal, Combat, Individual, and (when developed) the Meal, Ready-to-Eat, Individual

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MAJ CLIFFORD H. REYNOLDS entered the Army as an enlisted man in 1940 and was assigned to the 41st Infantry Division. He participated in the Papua Campaign in New Guinea and was commissioned in 1943. Reassigned to the 32d Infantry Division, he served with the unit through the liberation of the Philippines. During 1950-1952, Major Reynolds was with the United Nations Forces in Korea. He was later a regimental operations officer and battalion commander at Fort Rucker and Fort Benning from 1952 to 1955. At the present time Major Reynolds is Infantry Research and Development Coordinator for the Military Advisory Group, Quartermaster Food and Container Institute for the Armed Forces.

Figure 2. Meal, Ready to Eat, Individual: 1. Container, 2. Date Pudding, 3. Spread, 4. Bread, 5. Ketchup, 6. Jelly Bar, 7. Pork Chops, 8. Peaches, 9. Accessories, 10. Cocoa Powder.

Figure 3. Meal, Quick Serve, 6 Man: 1. Inner Container, 2. Disposable Trays, 3. Serving Paddles, 4. Canned Bread, 5. Accessories, 6. Chili and Beans, 7. Instant Rice, 8. Dehydrated Fruit Mix, 9. Spread, 10. Cookies, 11. Soda Crackers, 12. Can Openers.

(Figure 2). The Quick-Serve meal (Figure 3) consists primarily of precooked dehydrated foods that can be prepared in the field by inexperienced personnel. All of the Quick-Serve meals are packaged in flexible film and foil bags which are laminated to the inside of fiberboard cartons. To prepare the foods for serving, hot water is poured into the lined cartons and stirred. In about 20 minutes a hot meal is ready. A typical Quick-Serve meal could include dehydrated chili and beans, instant rice, pasteurized bread, pasteurized dehydrated fruit mix, soda crackers, margarine, jam, cookies and instant cocoa beverage.

The main dehydrated components are supplemented by canned bread and bread-like dessert items. This meal is issued in both 6- and 25-man packages.

The third and final stage of the *Simplified Food Logistics* concept entails the use of another ration, designated as the 25-in-1 Unitized, Uncooked Meal (Figure 4), which is designed to replace the present B-Ration. Initially, this 25-in-1 meal will consist of uncooked dehydrated foods designed to minimize the training and experience required for food service personnel. New methods of preservation will permit design of a meal that will approach the A-Ration in acceptability, but will require no refrigeration.

Both the Quick-Serve and the Unitized meals will permit significant savings in weight and size as well as reductions in refrigeration requirements. In addition, the Quick-Serve meals will eliminate the need for trained food service personnel and heavy, bulky, kitchen equipment.

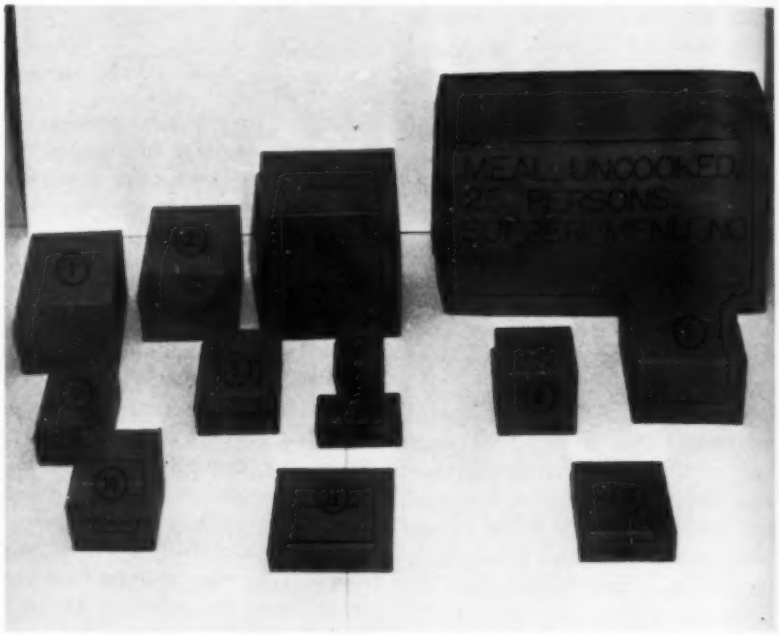


Figure 4. Meal Unitized, Uncooked, 25 Man: 1. Instant Rice, 2. Green Beans, 3. Pork Chops, 4. Jam, 5. Bread Mix, 6. Flour, 7. Shortening, 8. Cocoa, 9. Milk, 10. Apple Sauce, 11. Margarine, 12. Coffee.

Additional improvements are being sought. Certainly, replacement of the Meal, Combat, Individual, with the more palatable Meal, Ready-to-Eat, will be a step forward. Experiments associated with so-called "space feeding" may bring about new developments and concepts that will further change the feeding systems of the armies of the future.

Man has changed the shape of battle with sophisticated machines and munitions. Still, he gets hungry three times a day, and his efficiency varies directly with how well he is fed. *Simplified Food Logistics* promises to give our troops the food they need, when they need it, more rapidly and simply than ever before.

If, as they say, an army travels on its stomach, then this new "fuel" for our fighting man will certainly carry him a long way on the future battlefield.

(Continued from page 17)

Little To Gain — Much To Lose

require specialization rather than generalization, and this is how they are trained. Furthermore, it has been found that an Artilleryman cannot depend on duty assignments to obtain the practical experience in both areas. It is a matter of record that there is little cross-assignment of officers between Air Defense and Field Artillery. Thus, the many elements of this unsuccessful Artillery consolidation should give us pause to think before we experiment by forming a single combat branch from the existing arms.

Those who would combine the three arms under a single head have failed to realize some other significant ramifications of such a move. For example, what about mobilization? And how would this affect the Reserve components? In view of the limited training time available, can we logically expect our Reserve component officers to learn, as part of their "Combat Branch" training, the intricacies of all three branches —Armor, Infantry and Artillery? The answer, I think, is obvious. We do not have the time or money for such a plan.

And what of the training for enlisted personnel? Will these soldiers be left to pursue one field of effort, or must an Infantry NCO be prepared to assume duties in the Air Defense field, for example? As you can see, the integration of combat arms would bring with it confusion, lowering of morale, wasted funds and unpreparedness.

Is it possible to achieve a closer harmony among the combat arms without causing these ills? Yes—and it will not be necessary to erase the years of tradition or cross the paths of branch responsibilities. One obvious area which should be pursued is cross-training in service schools. Let's have large numbers of Infantrymen seated in classes at the Artillery School. Students wearing the Armor insignia should be enrolled in the advanced classes at the Infantry School. And let us broaden service school curricula to include more combined arms training. This broader schooling base would then provide the combined arms with greater unity and would minimize branch friction. Certainly other programs can also be pursued. Suffice to say that it can be done.

After we have taken a long look at the proposed integration of combat arms, it becomes evident that we would lose much more than we would gain from such a move. In essence, what we would be doing is making nothing out of something—while we tamper with success. We would be changing an efficient combat organization (that has never lost a war) into something of questionable and unproved value. This is not to say that we should resist change. But, on the other hand, should we change only for the sake of change? If we continue to insist on these changes and tamper with success—to replace it with an unknown quantity—we may find that this sought-after success has evaded us.

Indeed, the road to combat arms integration may lead us to chaos, and—what is worse—unpreparedness to do the job assigned.

The opinions expressed in this article are those of the author and do not necessarily reflect official thinking of the Infantry School.

LETTERS (Continued from page 1)

inclusion of another "Principle and Personality" in this issue. We will *have the next "principle" in the June-July issue.*—Editor

AERIAL BLOOPER

Sir:

In regard to the article "A Look Back at Lebanon" in your January 1960 issue . . . I believe that the picture of a C123 aircraft heading this article is misleading . . . [the C123] had no part in the movement of troops and equipment to Lebanon. . . . It is believed that credit should be given where credit is due: to the C119, C124 and C130 aircraft [that did the job].

Eugene R. Collins
SSgt, USAF
APO 128, N. Y.

We agree . . . we must have been up in "the wild blue yonder." —Editor

WHERE DOES THE MONEY GO?

Sir:

During the spring of 1959. . . . [I subscribed to *Infantry*] . . . I checked the permanent subscription box and paid $2.25 by check. The renewals, I presumed, were to be . . . $2.25 per year. My [current] billing is stated in such a manner *without* explanation that the annual dues are $3.50. . . That's quite an increase . . . How far in advance is it necessary to pay for this magazine? . . .

Name Withheld

Since Infantry *is now published six times a year as opposed to the old "quarterly" plan, it was necessary to raise the annual price to cover the cost of the two additional issues. In this regard, it should be mentioned that* Infantry *is an activity of a nonappropriated fund and operates on a nonprofit basis. (We were "in the black" last year a total of $13.00) Thus, as you can understand, the increase in price was necessary.*

The permanent plan which you mentioned is now on a three-year basis and the charge for a three-year subscription is $9.00. Subscribers are billed concurrently with the mailing of the last issue of their current subscription. This provides a two-month period for renewal of the subscription prior to the mailing of the succeeding issue. This, of course, affords all Infantry *readers ample opportunity to receive each issue without a lapse in their subscriptions.*—Editor

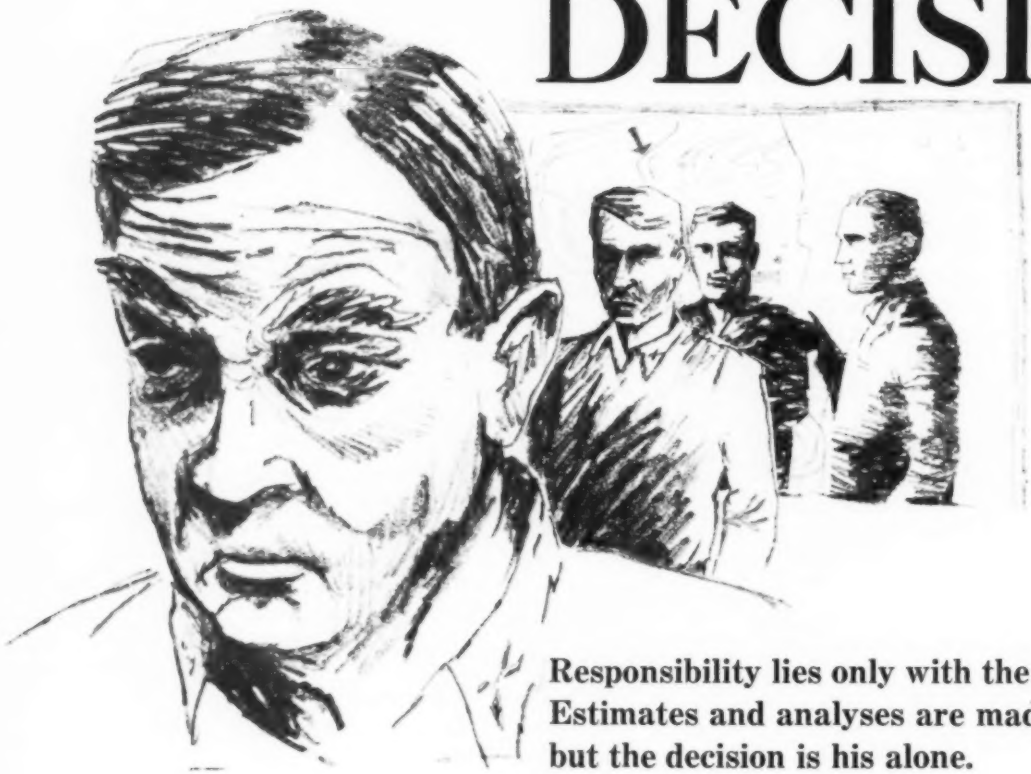
HE DIALED THE RIGHT NUMBER

Sir:

Reference the Feb-Mar issue of *Infantry* and the article "Dial 112 for Everything"! Lt Hastings [the author] knows of what he speaks.

Gerald J. Brown
Sfc, 1st BG, 119th Inf
N.C. Army National Guard

DECISION



Responsibility lies only with the commander. . . Estimates and analyses are made to help him, but the decision is his alone.

by Capt Solomon L. Hay Jr.

THE LIGHTS flickered in the command post . . . and in the shadows at the far end of the tent . . . a small group of men stood tense and waiting. . . .

Their eyes were focused on the quiet, pensive man who stood alone . . . their commander. It was he who must make the simple and yet awesome decision.

He paused, knowing that his decision—whatever it was—could determine the success or failure of his unit.

Then he spoke quietly. "All right . . . let it go."

As he spoke, the tension disappeared. The decision had been made . . . and the staff could now go to work. The weapon *would* be fired.

Forty-five minutes later, a large mushroom cloud rose over the horizon. Shortly after, a combined Infantry-Armor assault seized the objective.

This was the climax of the simple, yet awesome decision.

To anyone who had watched the hours of planning which preceded this operation, it might have appeared as though the decision had been reached with almost slide-rule precision. There had been detailed plans, estimates, target analyses and mathematical computations. All of these had combined to give the commander a solid basis for his decision.

Many of these detailed actions and considerations in nuclear planning are—as far as the Infantry commander is concerned—in the "nice-to-know" category. Still others are "must-know" information for successful command (at levels down to and including battle group) on the nuclear battlefield.

Target analysis is in this category. It is "must-know" information for the Infantry commander (and his staff) because it is the very heart of the planning sequence. And unless

the commander and his staff know how this analysis is accomplished—and what part they play in it—the odds are increased for making a "wrong" decision.

As its title implies, target analysis is nothing more than an evaluation of a target to determine the best means of destroying it. The analysis is normally accomplished by a Nuclear Weapons Employment Officer (NWEO) assigned at all tactical echelons down to and including the battle group. To accomplish this analysis, however, the NWEO needs considerable help and guidance from other staff officers as well as the commander.

As an example, after the commander has analyzed his mission, he should give the NWEO the following guidance regarding nuclear weapons:

- Required enemy damage or extent of non-effectiveness
- Troop safety requirements for friendly elements
- Results *not* desired (no fallout, no tree blow-down, etc.)
- Required reserve of nuclear weapons or a statement concerning the number of weapons to be expended during various phases of the operation

In the initial planning stages, this guidance may be very general but *must* become more specific prior to finalizing plans. An example of *general* command guidance might be: "Plan on neutralizing the Infantry battalion on Hill 600. I do not want friendly troops subjected to more than a negligible risk unless absolutely necessary."

More specific guidance will normally be provided by the commander after a preliminary analysis and after a definite concept of the operation has been determined. An example of *specific* guidance might be: "I want a high assurance of about one-third casualties to the Infantry unit located on Hill 600. Plan for a very high assurance of not exceeding a negligible risk to friendly troops who will be warned and protected. I want a very high assurance of no militarily significant fallout and no obstacles on Axis GREEN. Retain my previously announced reserve of weapons." Certain elements of this guidance may and probably will be contained in unit SOPs; however, the commander must ensure that this guidance is available to the staff.

After the command guidance has been obtained, a determination must be made as to whether the target is profitable for nuclear attack. To assist in this, the following general definition might be applied: *A nuclear target is anything that can materially affect the accomplishment of the unit mission and which cannot be reduced to the desired level of damage or non-effectiveness within the time allowed by conventional fires or maneuver.*

After this determination has been made, the target is then measured in the light of the available weapons to determine the feasibility of nuclear attack. This evaluation includes a determination of whether the desired results may be obtained while avoiding the undesired results. (Obstacles in the form of residual radiation, rubble, or tree blow-down are examples of results not desired.)

Once the NWEO has analyzed the target, he will prepare a recommendation to attack—or not attack—the target. If the recommendation is for a nuclear attack, it will include:

- Weapon system
- Desired height of burst
- Desired ground zero
- Time of attack
- Troop safety precautions
- Estimated damage/casualties;

depending on the terrain, the recommendation may also include the predicted condition of the target area (obstacles, blow-down, etc.)

- Fallout prediction (if required)

After the NWEO's recommendation is made, the commander and his staff can better evaluate what level of enemy non-effectiveness can be obtained and what obstacles will be created. From this, a better determination can also be made as to which course of action affords the best chance of success and provides the most economical use of nuclear weapons as well as maneuver forces. Thus, it is evident that our original premise—that target analysis is the heart of the planning sequence—is essentially correct. Without a good, meaningful target analysis, the tactical plan is really incomplete.

For this reason, it is necessary to explore in greater detail how this analysis is accomplished. At this point

"I want a very high assurance of . . . no obstacles on Axis GREEN."

DECISION (Continued from page 23)

it should be mentioned that no attempt will be made to delve into every detail of the analysis procedure. Only the salient points will be touched upon—just enough to give the commander and staff officer enough knowledge to properly evaluate recommendations made by the NWEO.

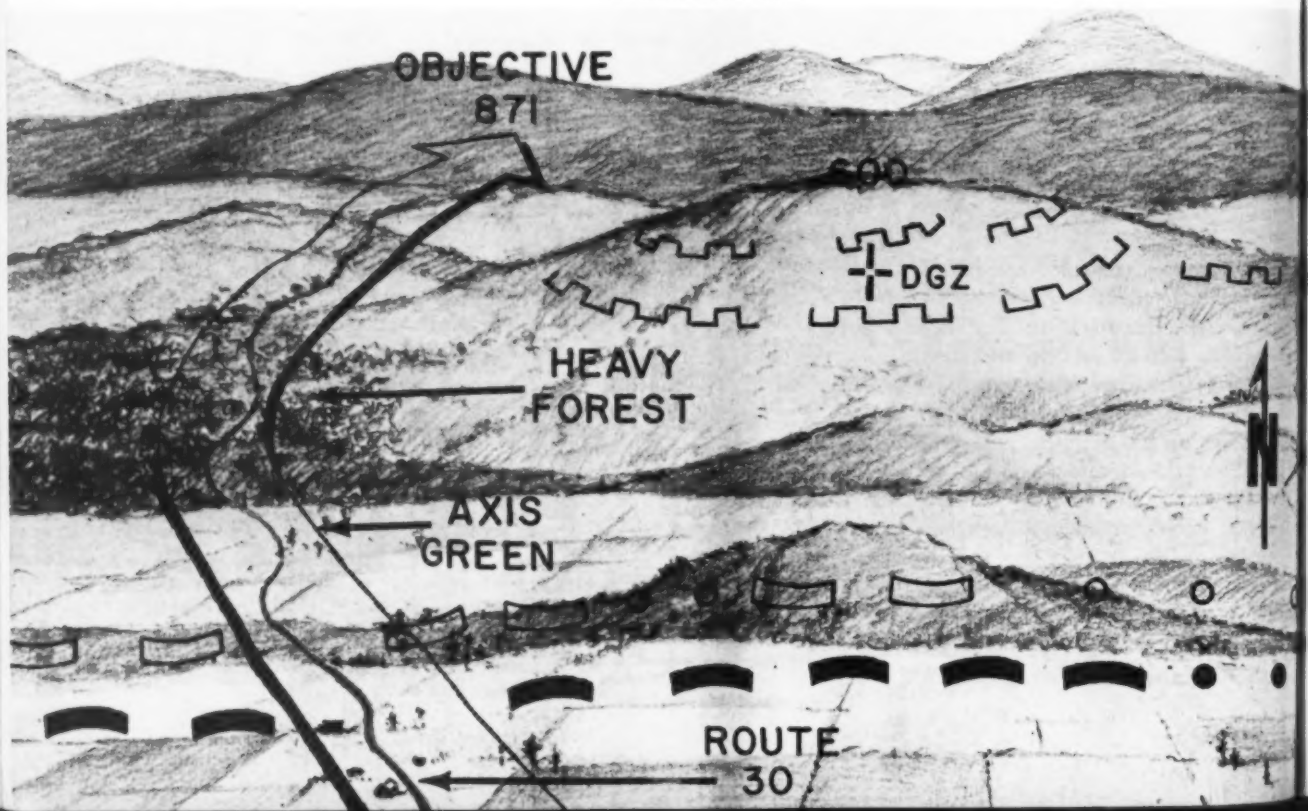
At the present time there are two basic methods of target analysis which are approved for Army use. These are known as the numerical method and the simplified method. The numerical method, upon which all other methods are based, involves the use of a series of graphs and tables to come up with a very precise mathematical answer. This system was originally devised and adopted for use during a time when variations in burst height were considered to be insignificant. As the low-trajectory, surface-to-surface delivery systems were developed, vertical dispersion (variations above and below desired burst heights) became much more of a problem. Because of these variations, as well as the requirement for the time-consuming mathematical computations (not to mention the numerous "unknowns" inherent in any tactical situation), a simplified method has been developed and is currently in use at corps level and below.

This method, known as the "weapon selector method," is more rapid and retains sufficient accuracy for the constantly changing battlefield situation. It is a graphical method involving use of an acetate scale. Estimated answers are obtained when the acetate template is used in conjunction with a series of precalculated data tables included in FM 101-31, July 1959 (SRD). These precalculated data tables, known as vertical dispersion nomo-tables, provide radii of casualties, damage, obstacles and troop safety for which vertical dispersion has been considered. A detailed description of these tables and how they are used in the simplified method of target analysis may be found in Chapter 8, FM 101-31.

For a quick thumb-nail sketch of how the target analyst puts all of the pieces of the puzzle together, let us turn to a hypothetical tactical situation involving the 1st Battle Group, 87th Infantry. This unit is planning for offensive operations with the specific mission of seizing Objective 871 for this phase of the attack (Figure 1). Division has allocated two small yield and one medium yield weapons to the battle group for this attack.

The S2 has furnished the NWEO with information concerning aggressor dispositions and they are substantially as shown in Figure 1. Aggressor forces on Hill 600 are protected by foxholes. The S2 has also given the NWEO data on the soil composition (needed to predict neutron-induced radiation) and the type forest (needed to predict obstacle radii) west of Hill 600.

Figure 1. The seizure of Objective 871 will be made in conjunction with a nuclear attack on Hill 600.



CAPT SOLOMON L. HAY JR. received his commission upon graduating from Clemson College in 1949. After completing the Basic Infantry Officer Course, he was assigned to the 46th Field Artillery Battalion at Fort Jackson. During the Korean War he was a platoon leader and company commander with the 21st Infantry Regiment. Following an assignment at Fort Benning, Captain Hay served as a company commander and regimental S3 with the 10th Infantry Regiment in Germany until 1955. Captain Hay is a 1957 graduate of the Infantry Advanced Course and completed the Nuclear Weapons Employment Officer Course at Sandia Base, New Mexico. He is presently an instructor with the Nuclear Weapons Committee, USAIS.

Additionally, the S3, in coordination with the S2, has tentatively selected the aggressor position on Hill 600 as a potential nuclear target. According to the S3, the tentative plan involves a rapid motorized attack along Axis GREEN to Objective 871. The attack will be supported by nuclear and conventional fires.

For this operation, the commander furnished the following guidance: (1) A high assurance of about one-third casualties to the aggressor troops in foxholes is desired; (2) A very high assurance is required of not more than negligible risk to friendly troops who are warned and protected; (3) A very high assurance of no tree blow-down on Route 30 and no significant fallout is required; (4) A very high assurance of no neutron-induced contamination on Axis GREEN is required; (5) It is desired that at least one nuclear weapon be retained in reserve for this phase of the operation. (Recall that you have three weapons allocated for this phase of the operation.)

With all of this information at hand, the NWEO can now begin his simplified target analysis. The first step is to tentatively select desired ground zero (DGZ). This is usually at target center, and in this situation the NWEO would probably select the center of the target area (i. e., the forward slope of Hill 600) as DGZ.

The next step is to eliminate the weapons systems which are obviously unsuitable for attack on the target. Thus, weapon systems which are out of range, obviously too inaccurate or with large yields could be eliminated from further consideration. In this particular case, the NWEO would not eliminate any of his allocated weapons. *He would contact the delivery agencies to determine both horizontal and vertical delivery errors for the available systems.* (Remember this, for it will come in handy later.)

The NWEO then uses the weapon selector (acetate scale—Figure 2) to estimate visually the radius of a circle (RD) which will provide the required target coverage. In this case, let us assume that the RD is 350 meters. This RD will give the commander his desired one-third damage. However, it must be remembered that horizontal delivery error will exist and the original estimate may require revision later in the analysis.

After the required radius of damage/casualties is determined, a check of the vertical dispersion nomo-tables in chapter 10, FM 101-31 (an example is shown on the following pages) will provide information for the allocated weapons. Because of the proximity of friendly troops and the restrictions for this situation (remembering the commander's guidance), the NWEO would also determine the safety and obstacle radii from the appropriate columns of the table. Let us assume that a rapid recheck of the target area reveals that the low yield weapon would meet the commander's restrictions and would also produce one-third coverage. Therefore, the NWEO would tentatively select the low yield weapon. (In special situations where elongated targets, troop safety or potential obstacles are involved, a two-weapon attack might be indicated.)

In the next step, the NWEO would apply the vertical delivery error (obtained earlier from the delivery agency) to the nomo-table to determine the desired height of burst which will provide the required assurance of no significant fallout. (It should be noted that "very high assurance" has been standardized to mean a 99 percent probability of no fallout.) Additionally, the NWEO would attempt to find appropriate rows in this nomo-table which will indicate the casualty radii, safety radii and obstacle radii for this weapon. (To better understand this procedure, refer to the sample problem on the following pages.)

Figure 2. The acetate scale aids materially in making a rapid analysis.

Horizontal delivery error (which was obtained earlier from the delivery agency) is now applied by drawing a circle around the tentative DGZ equal in radius to 3 PE (Probable Errors) or 2 CEP (Circular Errors Probable). This circle would then represent the area in which there is a high probability (about 90–95 percent) of a hit. The casualty radius (RD) is then marked in grease pencil on the acetate scale. A check of estimated target coverage at the *worst possible* point on the circle around DGZ (in which we assume that the weapon has hit at this worst point) will confirm that a high assurance of slightly more than one-third target coverage will still be obtained.

The NWEO must then check the commander's required restrictions and troop safety. This is done by adding the appropriate multiples of horizontal delivery error to the casualty and obstacle radii previously determined and by marking these distances on the acetate scale. The center of the scale is then placed on DGZ and the appropriate safe distance is noted with reference to friendly troops, Axis GREEN and Route 30. If the minimum safe distance falls short of the appropriate element, the requirement is met and DGZ is acceptable. If the safe distance goes beyond Axis GREEN, Route 30 or friendly troops, DGZ would be displaced in order to follow the commander's guidance.

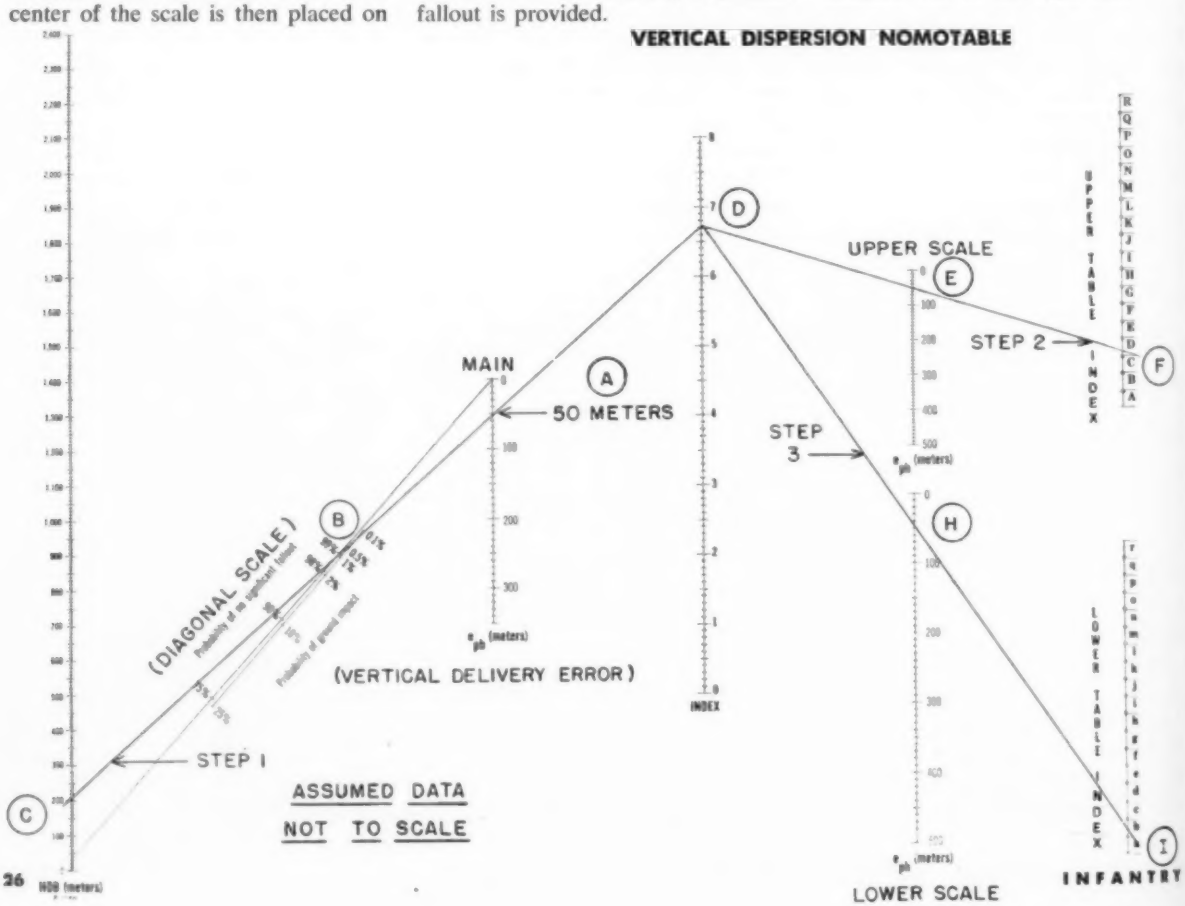
The NWEO then makes his recommendation. As previously discussed, this consists of a statement to include:

- Weapon system
- Desired height of burst
- Desired ground zero
- Time of attack (usually 15–30 minutes prior to H-Hour, to provide time for post-strike analysis)
- Troop safety precautions
- Estimated damage/casualties and obstacles in the target area
- In this case, no fallout prediction is required because a 99 percent assurance of no militarily significant fallout is provided.

This completes the target analysis. On the surface, it would appear that the entire procedure is complex and time consuming. However, considering the scarcity, cost and tremendous impact of nuclear weapons, the detailed planning and analysis are more than worth the effort.

When we measure what a well-placed nuclear weapon will do for a tactical operation, the importance of a good target analysis is apparent. For a poor job, the result could be defeat in battle. This is why it is necessary to follow a specific system to reduce the probability that the weapon will give anything less than maximum destruction of the target.

Thus, it is evident that poking a finger at a map and saying, "Here is where I want it," will just not prove satisfactory. The commander must know the inner workings of the estimates and analyses which provide him a basis for decision. When he does, the odds are increased that his decision will be the right one.



VERTICAL DISPERSION NOMOTABLE

UPPER TABLE

KT

	CASUALTY RADII IN METERS											DAMAGE RADII IN METERS						
	Second degree burns on bare skin	In open (thermal not considered)		In foxholes		In armor		In forests (unprotected)		In urban areas (unprotected)		Tanks, arty, int weapons (moderate) supply depots (severe)	Vehicles (moderate) office and factory buildings (severe)	Bridges (severe)	Forests (severe)	Frame houses (severe)	Apartment houses (severe)	
		At 1 hr	At 4 hr	At 1 hr	At 4 hr	At 1 hr	At 4 hr	At 1 hr	At 4 hr	At 1 hr	At 4 hr							
R																		R
Q																		Q
P																		P
O																		O
N																		N
M																		M
L																		L
K	0																	K
J	100		0				0		0									J
I	450	0	200				0	0	200		0							I
H	600	100	450				100	100	450	0	300							H
G	700	400	600		0	0	400	400	600	300	500					0		G
F	800	550	700	0	250	250	550	550	700	500	600				0	400		F
E	850	650	800	200	400	400	650	650	800	600	700		0		200	900	0	E
D	900	700	850	350	500	500	700	700	850	750	750		150		500	950	350	D
C	800	750	900	450	600	600	750	750	900	850	850	0	350		500	800	500	C
B	350	800	900	500	650	650	800	800	900	800	850	150	350	0	450	800	500	B
A	350	800	900	550	650	650	800	800	900	750	850	200	350	150	450	800	500	A

G

ILLUSTRATIVE PROBLEM

Given:
e_{ph} (vertical delivery error) = 50 meters. (Note: This data is obtained from the delivery agency.)

Find:
(1) Desired height of burst (HOB) for a very high assurance (99 percent) of no significant fallout.
(2) Casualty radius for aggressor troops in foxholes at 1 hr.
(3) Troop safety radius for negligible risk to warned exposed troops.

Answers:
(1) 215 meters
(2) 350 meters
(3) 1700 meters

Solution:
(Step 1.)
Align a straightedge with the 50-meter mark on the e_{ph} scale (Point A) and the 99% mark on the diagonal scale (Point B). *Read about 215 meters on the HOB (height of burst) scale (Point C). Thus we have found the desired HOB for a very high (99%) assurance of no significant fallout.* At this time note the intersection of the straightedge with the index scale (Point D).

(Step 2.)
Rotate the straightedge around Point D on the index scale and through the 50-meter mark on the upper e_{ph} scale (Point E). Note that straightedge intersects upper table index at row of entry D (Point F). By going to the upper table (Point G on this page) we can determine the casualty radius; *for troops in foxholes at 1 hr., this radius would be 350 meters.*

LOWER TABLE

	TROOP SAFETY RADII IN METERS (Appropriate horizontal buffer distance must be added to these radii)									Obstacle radii tree blowdown	Induced radiation hazard
	Unwarned exposed			Warned exposed			Warned protected				
	Negligible	Moderate	Emergency	Negligible	Moderate	Emergency	Negligible	Moderate	Emergency		
r	1,400	0		800	0		300				
q	1,500	200		1,000	200		600	0			
p	1,600	500	0	1,100	500	0	800	200			
o	1,650	750	200	1,200	750	200	900	550			
n	1,750	900	500	1,300	900	500	1,050	700	0		
m	1,800	1,000	700	1,400	1,000	700	1,150	850	200		
l	1,850	1,100	800	1,450	1,100	800	1,250	950	500		
k	1,900	1,150	900	1,500	1,150	900	1,300	1,050	650		
j	1,900	1,200	1,000	1,550	1,200	1,000	1,350	1,150	750		
i	1,950	1,250	1,050	1,600	1,250	1,050	1,400	1,200	850		
h	1,950	1,300	1,100	1,650	1,300	1,100	1,450	1,250	900		
g	2,000	1,350	1,150	1,650	1,350	1,150	1,450	1,250	950		
f	2,000	1,400	1,200	1,700	1,400	1,200	1,500	1,300	1,000		
e	2,000	1,400	1,200	1,700	1,400	1,200	1,500	1,300	1,000		
d	2,000	1,400	1,200	1,700	1,400	1,200	1,500	1,300	1,050		
c	2,000	1,400	1,200	1,700	1,400	1,200	1,500	1,300	1,050		
b	2,000	1,400	1,200	1,700	1,400	1,200	1,500	1,300	1,050		
a	2,000	1,400	1,200	1,700	1,400	1,200	1,500	1,300	1,050		

J

ASSUMED DATA

(Step 3.)
Re-align straightedge with the initial point of intersection on the index scale (Point D) and the 50-meter mark on the lower e_{ph} scale (Point H). Note that straightedge crosses lower table index for row of entry b (Point I). By going to the lower table for troop safety (Point J on this page), we find *the safety radius for negligible risk to warned exposed troops is 1700 meters.*

Thus, as the target analyst, we have solved the requirement placed upon us by the commander; we have found, by use of a few simple devices, the desired height of burst, casualty radius and troop safety radius for this specific weapon.

YOUR INFANTRY CAREER

This department provides important information on policies and personnel actions which affect your Infantry career. Material for Active Army officers is furnished by Infantry Branch of the Officers Assignment Division. Information for USAR officers and enlisted Infantrymen is obtained from other Department of the Army agencies.

From Infantry Branch

COUNSELING OF JUNIOR OFFICERS

Personal letters received in Infantry Branch and interviews with officers visiting Infantry Branch all too often have indicated that many officers are unaware of their deficiencies until they see adverse comments and low ratings on their efficiency reports. All officers make mistakes, but few have the insight to recognize their mistakes without proper, timely counseling. If an officer is to properly correct his deficiencies and improve his manner of performance, he must be made aware of his mistakes at the time they occur. All officers, especially those who render efficiency reports on junior officers, must recognize this important responsibility.

OFFICERS ASSIGNMENT PREFERENCE STATEMENT (DA Form 483)

Many officers visiting Infantry Branch ask this question: "Do you ever consider my preference statement when you reassign me?" The answer to this question is an unqualified "Yes." The needs of the service are considered to be of primary importance in making assignments. At the same time, every effort is made to consider career needs and individual preferences. These basic criteria are applied in the following priority:

1. The needs of the service.
2. The career needs and the availability of the individual.
3. The preference of the individual.

The importance of ensuring that a current preference statement is on file in Infantry Branch cannot be overemphasized. This statement is made a part of your Branch 201 file and is reviewed each time you are reassigned. In order to assist assignment officers in the Branch, all portions of your preference statement should be filled out. If you are near retirement, complete block 7 of the DA Form 483. If you have a special problem or a special preference, complete block 10. Be sure to include complete details of any special consideration. This will enable assignment officers to place proper emphasis on your preferences.

When you list your preferences for foreign service, there are two important considerations: First, AR 614-30 lists many of the countries where long and short overseas tour assignments are available. You should study this AR before completing your preference statement. Second, in order to be realistic in your preferences, you must consider your last tour. In general, if you have

returned from a long-tour area, you are most vulnerable for a short tour. If your last tour was a short tour, you are eligible for a long overseas tour. Details of overseas service vulnerability by grade were published in the January 1960 issue of *Infantry*.

If you are returning from overseas in the near future, you probably have a current preference statement in your Infantry Branch file. If you have been assigned in CONUS for a period of 18 months or longer, there is a good chance that your preference statement is dated in 1957 or even earlier. Help yourself and help Infantry Branch by maintaining a current preference statement in your file.

ADDITIONAL QUERIES

QUESTION: Where can I expect to be reassigned at the completion of my present tour of duty in CONUS?
ANSWER: Normally you will remain assigned at your present station until ordered to an overseas assignment. When you become eligible for such an assignment, your Officer Qualification Record (DA Form 66) is reviewed with special attention to prior overseas service. When and where you go depends upon when you returned from your last tour, where the tour was served and requirements at that particular time. It is also possible that you will be reassigned to another station in CONUS to meet an urgent military requirement that cannot be otherwise filled.

QUESTION: I am presently in the hospital and assigned to the Detachment of Patients. What happens when I am released?
ANSWER: When you are ready for release from the hospital, the hospital commander notifies Infantry Branch. The Branch furnishes the hospital commander assignment instructions based on requirements, medical restriction if any, and your assignment preferences. The hospital commander publishes the orders for your new assignment.

QUESTION: If I were to come back to CONUS on emergency leave for compassionate reasons and I would like a reassignment to CONUS, how would I go about it?
ANSWER: Even though on emergency leave, you are still controlled by the theater commander, and Infantry Branch has no authority to reassign you. If you were returned from overseas for a compassionate reason and that reason still exists near the end of your emergency leave, you may make application for a CONUS assignment directly to the Adjutant General. Your application must contain your compassionate reasons or circumstances and must include certificates from doctors, the Red Cross or others having pertinent knowledge of your case. If the decision is favorable, Infantry Branch will make every effort to assign you as close to your area of preference as military requirements will permit.

QUESTION: How can I obtain reassignment from my present unit to another unit in CONUS?
ANSWER: Current budgetary limitations have resulted in DA policy restricting intra-CONUS reassignments to those required to meet service needs. This does not preclude movement based on approved compassionate reasons. In the event you have cogent reasons, you must submit an application through channels under the provisions of AR 614-100.

QUESTION: How do I apply for duty with a Military Mission?
ANSWER: It is not necessary for you to make application for the mission you desire. You may state your desire on your preference statement. When the assignment section screens records for mission assignments, your desires will be considered. Additionally, a letter to Infantry Branch would be appropriate, if you so desire.

QUESTION: Is my present assignment a stabilized tour? If so, how long can I expect to remain assigned?
ANSWER: Details on stabilized tour positions and length of tours are outlined in AR 614-5. In general, field grade officers are normally stabilized on a particular job for three years and company grade and warrant officers are stabilized for two years. Some examples of stabilized tour assignments are:

Department of the Army and higher staff
CONARC
Service School instructors
USMA
ROTC instructors
Reserve components
Recruiting duty

ROTC Program

A revitalized course of studies within the college Reserve Officers' Training Corps program was recently announced by Secretary of the Army Wilber M. Brucker.

Beginning with the school year 1960–61, advanced ROTC cadets will take about 20 percent of their military instruction in university-taught subjects such as science, psychology, communications and political institutions.

To permit the change, military subjects (such as crew-served weapons instruction) will be taught during the six-week summer camp period, normally attended during the junior and senior college years.

The Army anticipates that the new program will stimulate increased intellectual attainment on the part of the ROTC students; also, that it will lessen the training load on students, particularly those pursuing technical degrees, and make the overall program more attractive.

The ROTC is the major source of officers for the U. S. Army. The present enrollment is over 155,000 cadets in 248 colleges and universities.

ENLISTED CAREER INFORMATION

E8 AND E9 PROMOTION POLICIES

Reports reaching DA indicate that some noncommissioned officers do not understand the theory and intent governing promotion to E8 and E9. These new enlisted grades were added to the grade structure to provide increased career progression, to relieve compression in grade E7 and to encourage outstanding enlisted personnel to complete 30 years of service. These objectives can be fully achieved only if there is a continued flow through these grades and the incentives of promotion are offered at the proper times. This means that the major emphasis in E8 and E9 promotions must be placed on the selection of experienced senior noncommissioned officers in terms of years of service; otherwise, promotions to these grades could quickly stagnate and incentives could disappear.

Despite the importance of concentrating on noncommissioned officers with the most service, it is recognized that there are many outstanding E7s with considerable time in grade but less than the required years of service. For this reason, commanders are authorized to utilize up to 20 percent of their promotion quotas to advance outstanding junior noncommissioned officers. Under this authority, persons in grade E7 who are otherwise qualified may be promoted to E8 if they have completed eight to 15 years of active Federal service and have eight years of cumulative enlisted service in computation of basic pay. Similarly, promotion to E9 is authorized for those individuals who have completed 10 to 18 years of active Federal service and who have 10 years of service creditable in computation of basic pay.

Promotions to grade E8 began on 1 June 1958 and to E9 on 1 April 1959. The projected strengths for grades E8 and E9 are as follows:

Grade	End Strength 30 June 60	End Strength 30 June 61	End Strength 30 June 62
E8	6250	8900	11,500
E9	2200	3000	3840

This program provides for the advancement of approximately 16,000 E7s to grades E8 and E9 by 30 June 1962; in other words, about one of every three of today's E7s can expect advancement if qualified.

NCOs in grade E7 and above should be informed of the reasons for this policy. They should understand that they cannot expect promotion to E8 and E9 until NCOs with longer service have been considered.

FOREIGN DUTY

A number of foreign duty slots are open to enlisted men in various MOSs. Overseas areas where vacancies exist include Greece, the Netherlands, Spain, Iran, Pakistan, Ethiopia and various Central and South American countries.

Particularly needed are field radio repairmen, field communications experts, stenographers, laboratory technicians and various mechanical repairmen. In many of these assignments, foreign language ability is required.

A recently published directive, DA Circular 641-1, lists the foreign stations needing these specialists as well as the MOS and special requirements. The circular also outlines a new procedure designed to speed screening and identification of personnel qualified for Military Advisory Group and Military Mission duty.

SCHOOL LIST

Armed Forces Staff College

Balitis, John J.	Major
Cunningham, John D.	Major
Dietrich, Frank L.	Major
Donaldson, John W.	Lt Col
Dye, Earl S.	Major
Emerson, Henry E.	Major
Etchemendy, William W.	Major
Glasser, Anthony P.	Major
Goodwin, Guy R.	Lt Col
Gramling, Freddie W.	Lt Col
Holt, Robert B.	Lt Col
Lanier, Donald H.	Major
Neff, John H.	Major
Perry, William O.	Major
Presson, David R.	Major
Rattan, Donald V.	Lt Col
Ringler, Arthur R.	Lt Col
Sawyer, Bickford E.	Major
Whitener, William J.	Major
Williams, Richard G.	Major

United Kingdom Joint Services Staff College

Caldwell, William B.	Major

Escuela Superior de Ejercito

Willliams, Robert M.	Col

Ecole Superieure de Guerre

Timonthy, James S.	Lt Col

FOR PEOPLE IN A HURRY

Following are extracts from *Combat Lessons* (World War II Combat Reports) and *Combat Report from Korea*. They are brief, pertinent and worthwhile to Infantrymen.

Communication officer: "Failure to observe radio discipline is a major problem for Army units. In combat each individual believes his case a special one not bound by established rules. This tendency must be discouraged by positive action. Radio discipline is established to facilitate essential communications during combat and is not a peacetime plaything to be discarded when action is joined."

Mortar forward observer: "Train every man in the mortar platoon to adjust mortar and artillery fire. . . More than one ammo-bearer in our platoon has become an FO in the space of a few hours. . . ."

Airborne machinegunner: "When we jumped with our machineguns, we put them in Griswold containers and wrapped a belt of ammo around them . . . that way we were able to fire immediately after landing. . . ."

Platoon sergeant: "On our last combat jump, the men in my platoon all had a piece of salvage suspension line tied from their pistol belt to the loop on the pistol handle to prevent the loss of the pistol in the opening shock. The line should be about three feet long (for easy use) and can be tucked in the pistol holster to prevent hanging. . . ."

TIPS for TANK KILLERS

Tactics and tools to give the Infantryman a greater potential against his armored enemy.

by MSgt Townsend H. McCaskey

THE TACTICS

When we contemplate armored combat of today, we are prone to think of it as the clashing of large masses of tanks against tanks as they thunder across gently rolling, open terrain. Classically, the outcome of this hypothetical armored battle is determined by which side is quickest with its thrusts and counterthrusts—and by which force is more adept in timely commitment of its massive armored reserve.

This is the dramatic mental picture we sometimes paint when we consider armored warfare . . . but, unfortunately, it isn't a true picture—nor the whole picture.

We know from experience in past wars that enemy armored units do not always remain as cohesive, flexible forces. On the contrary, they are more apt to become bewildered chunks of steel, and particularly so when they are separated from other tanks and their Infantry comrades. And it is these bits and pieces of enemy armor, skulking about the battlefield looking for cover and concealment, that become easy prey for Infantry units with tank-killer teams.

One such Infantry unit is the 101st Airborne Division at Fort Campbell, Kentucky. In the 101st, great emphasis is placed on the tank-killing capability of the individual and the small Infantry unit. For example, in the Division Noncommissioned Officers School and the Recondo School, all students are taught how to construct the tools for tank killers. Then they are given further practical training in applying these tools with the proper tank-killing tactics and techniques. The end result is one that casts a new light on armored warfare as we now know it. For with a few of these home-made tools (no special weapons or equipment are required), and the personnel available in the rifle platoon, every unit (and individual) can be a tank killer.

To see how these tools and tactics are applied, let's follow one of the "Screaming Eagle" tank-killer teams (a rifle squad reinforced with a 3.5-inch rocket launcher team) in a typical attack on an enemy tank.

After selecting the "victim," the squad leader, using arm and hand signals, orders it to be attacked. The men in the team need no elaborate instructions since they have been thoroughly rehearsed in the techniques and have become accustomed to a set of standard procedures. Thus, all subsequent actions are swift and precise.

One fire team is designated to support while the other (reinforced with the rocket launcher) assaults. In addition to furnishing protective rifle fire, the support fire team uses rifle smoke grenades directed at the enemy vehicle to aid the assault team in moving to its position under concealment.

Members of the support team partially expose themselves for a fleeting moment to cause the enemy vehicle's crew to believe that the main attack will come from their direction. Immediately after being seen, the support fire team moves (by a concealed route, if possible) to an alternate position where they once more begin to fire smoke grenades at their prey. Simultaneous with the employment of smoke, the support team places small arms fire and fragmentation rifle grenades in the vicinity of the enemy tank to isolate it momentarily from any of its supporting Infantry troops.

In the meantime, the assault team, having moved into its assault position, fires additional smoke at the target (Figure 1). Without exposing themselves unduly, the rocket launcher team (with the assault group) fires one or two rounds at the enemy vehicle to immobilize it.

Immediately following this, the killing blow is rendered

Figure 1. Tanks are smoke-blinded as the assault begins.

by the other members of the assault team. First, napalm devices are thrown at the vehicle (Figure 2). After these explode and the tank is completely blinded, three 10-pound satchel charges are placed near a vital area on the vehicle. In the case of a tank, for example, this would be under the turret overhang, where the turret meets the

Figure 2. Napalm devices—thrown by individual Infantrymen —are the first step in the kill.

chassis. On any track-driven vehicle, the charges can also be placed in the track assembly near the drive sprocket. This will guarantee immobility for the vehicle.

As a *coup de grace,* another rocket launcher round is fired into the smoking, burning hulk. Then the assault team withdraws under cover of fire delivered by the support group which also acts as the rear guard (Figure 3). Through previously coordinated plans, both teams meet at a rendezvous point and then proceed toward friendly positions along a "get-away" route.

All of the foregoing action takes place in less time than it takes to tell about it. Timing, of course, is the real key to success in this business of tank killing. Each individual on the team must be thoroughly trained not only in *how* to use his tools as part of the team effort, but also *when* to play his part in the sequence of events. Obviously, training is the only way in which this precision is obtained. A complete mastery of basic soldiering skills is necessary first, and then special training must be conducted in the tactics and techniques used during tank fighting. Once teams are organized and have mastered their craft, constant rehearsals are necessary to ensure that their proficiency remains high.

When you get right down to it, destroying a tank may seem to be an awesome task for an Infantryman to accomplish. But it *can* be accomplished—and with a great assurance of success. In fact, our tank-killer teams can become as confident and assured as David was when he set forth to slay Goliath. All it takes is a little know-how, some training and a proper application of the tools and techniques to do the job. (For a closer look at the tools, let's examine how members of the 101st Airborne Division construct their tank-killing devices.)

Figure 3. The withdrawal from the smoking hulk is made under cover of support group fires.

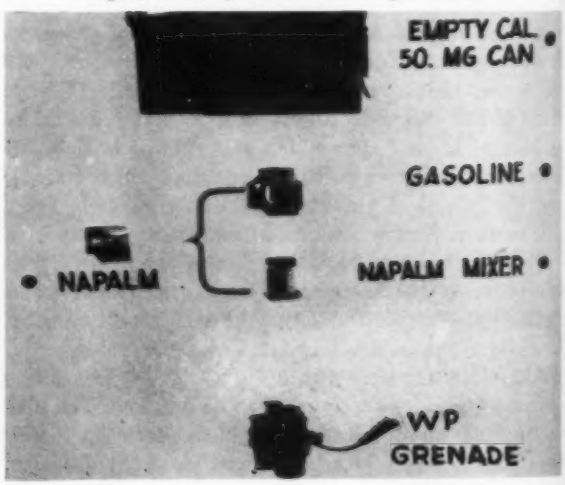
THE TOOLS

Infantrymen who find themselves without organic antitank weapons can become veritable giant killers with a few "makin's" and a little know-how. The "makin's," or "tools for tank killers," are three weapons developed by the 101st Airborne Division. All can be fabricated from easily obtained materials and each produces excellent results when employed against armored vehicles. Here they are:

The Eagle Fire Ball

The Fire Ball (Figure 4) is made from a caliber .50 machinegun ammunition can, three-quarters filled with napalm (M1 thickener and gasoline). A white phosphorous grenade wrapped with Primacord is placed inside the

Figure 4. Components of the "Eagle Fire Ball."



can. Combustion of the napalm mixture is then caused by the exploding cord and grenade which are detonated by means of a cap, fuse and fuse-lighter.

Improvised grapnels, made from bent nails or other pieces of metal, may be incorporated in the package to assist in its adherence to metal surfaces. A magnet placed inside the ammo can may also be used for this purpose.

Once the weapon explodes on a tank, the vulnerable portions of the tank which are covered with napalm will burn furiously. In addition, so much heat will be generated that the tank's crew will be asphyxiated, if not burned, unless the vehicle is evacuated.

The Eagle Cocktail

This "cocktail" (Figure 5) consists of a two-quart plastic or rubber bag (leak-proof) containing napalm.

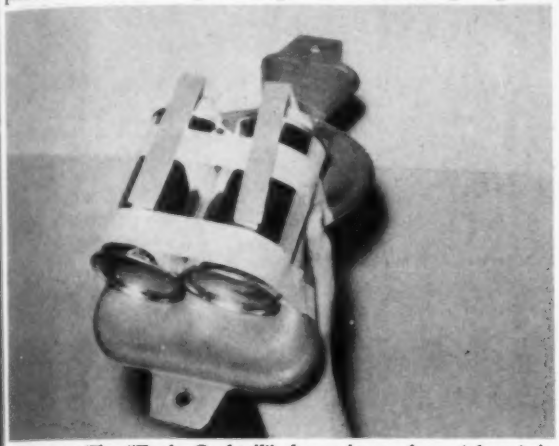


Figure 5. The "Eagle Cocktail" shown in mock-up (above) is rapidly and easily made of "scroungeable" material.

By taping a smoke grenade and a thermite grenade to the bag, the entire assembly becomes a lethal package which can be thrown at an armored vehicle. Once the package strikes and the grenades detonate, the contents of the bag are spread over the vehicle's surface and produce the same effect as the Fire Ball. Additionally, the smoke grenade produces a bonus effect by further obscuring the already limited vision of the vehicle's crew. This affords the attacker more concealment to employ additional weapons or withdraw unseen. All in all, this cocktail is guaranteed to produce a hangover for enemy armored crews.

The 40-Pound Shaped Charge

In addition to its cratering capability, the standard 40-pound shaped charge (Figure 6) can also be used as a very effective antitank weapon.

By laying the charge on its side along a road—and by

Figure 6. Cratering charge set for side-on shot.

pointing it across the road—the shaped charge can be used to immobilize even the heaviest tank. The weapon must be hidden in weeds or other rough growth adjacent to the road. It is then detonated when an enemy tank comes abreast of it simply by using an electric blasting cap which is connected by communication wire to a battery. When the ends of the wire make contact with the battery, the blasting cap goes and so does the tank.

If time permits, the charge can be buried in the road and pointed upward. A piece of burlap, covered with dirt or mud, can be used to camouflage it.

As an enemy tank rolls over the charge, detonation can be accomplished either by remote control or by using a trip wire (A person would have to look pretty hard to find the turret after this one went off).

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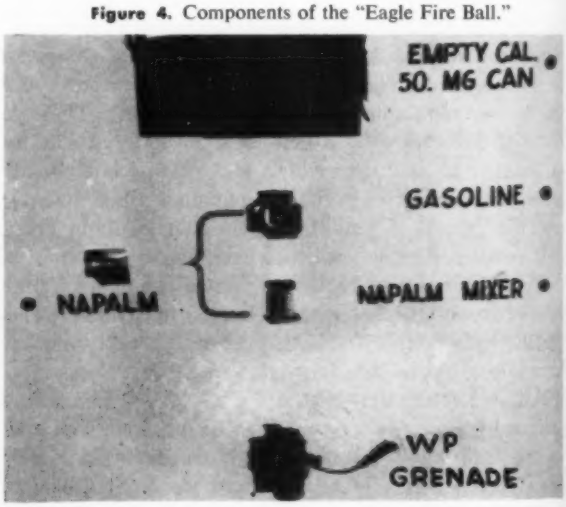

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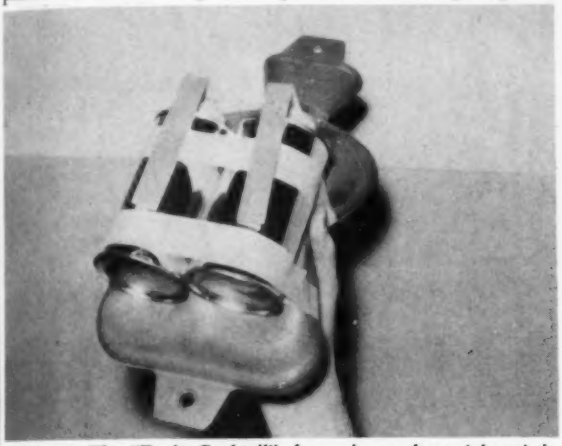

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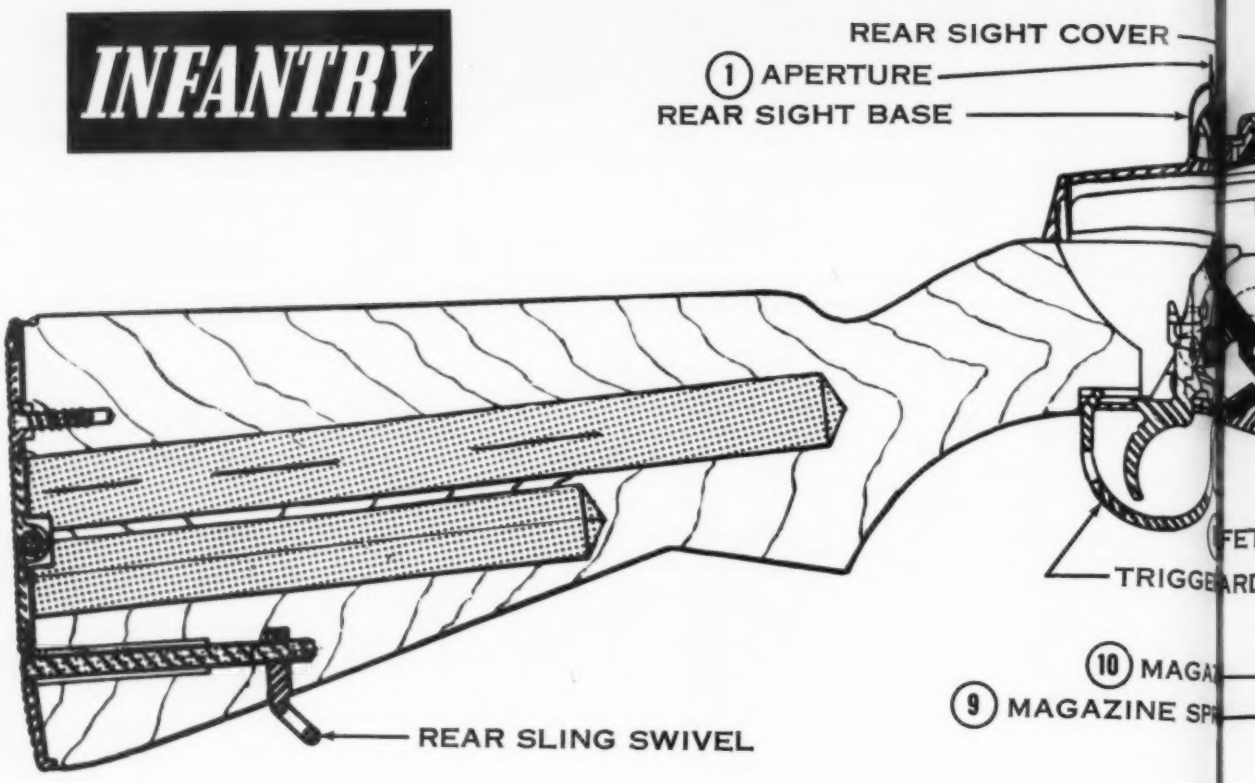
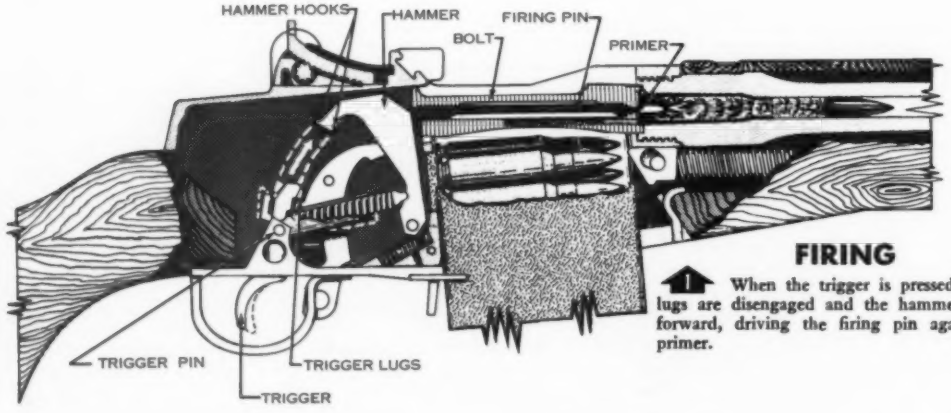
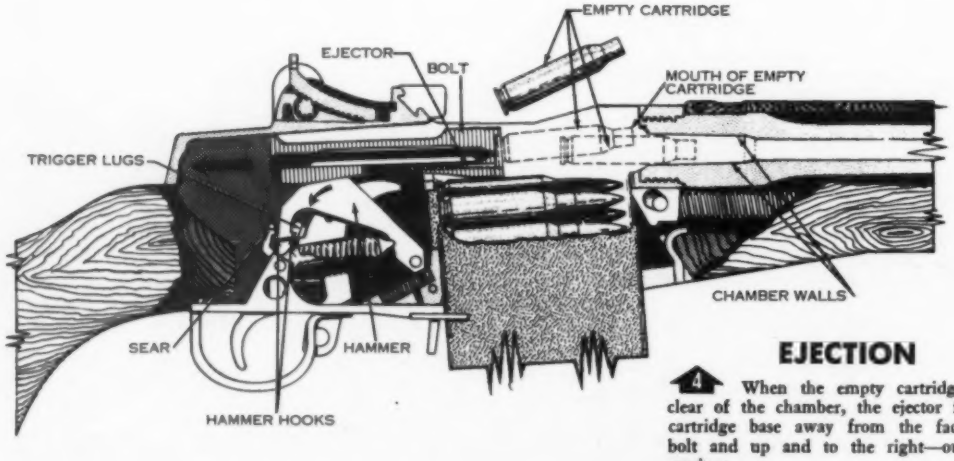
INFANTRY





FIRING

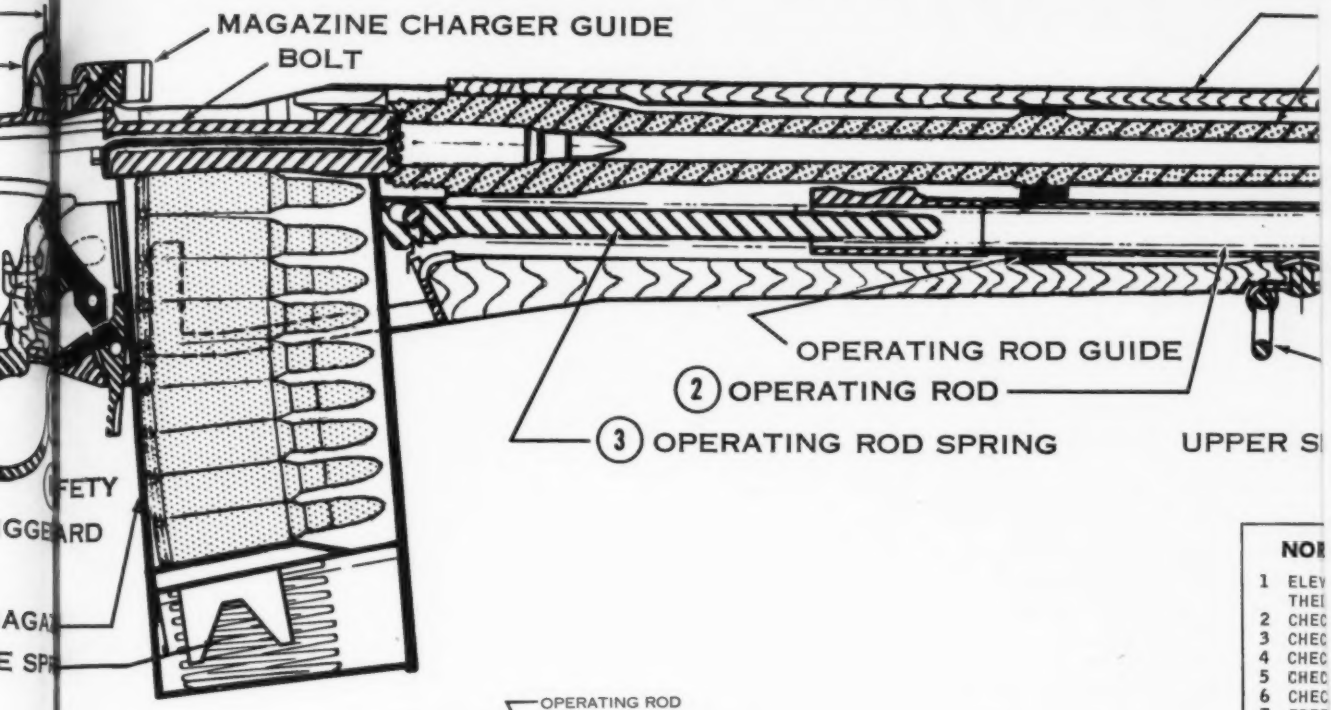
1 When the trigger is pressed, trigger lugs are disengaged and the hammer moves forward, driving the firing pin against the primer.



EJECTION

4 When the empty cartridge case is clear of the chamber, the ejector forces the cartridge base away from the face of the bolt and up and to the right—out of the receiver.

U. S. RIFLE 7.62-MM M14



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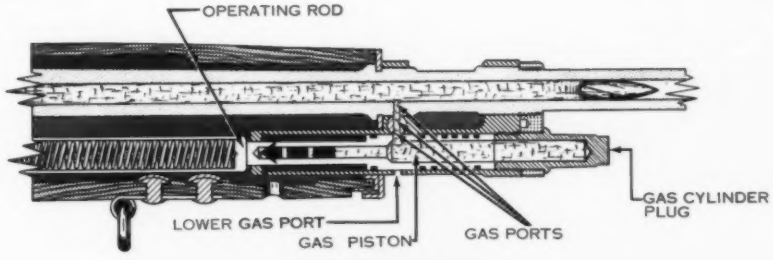
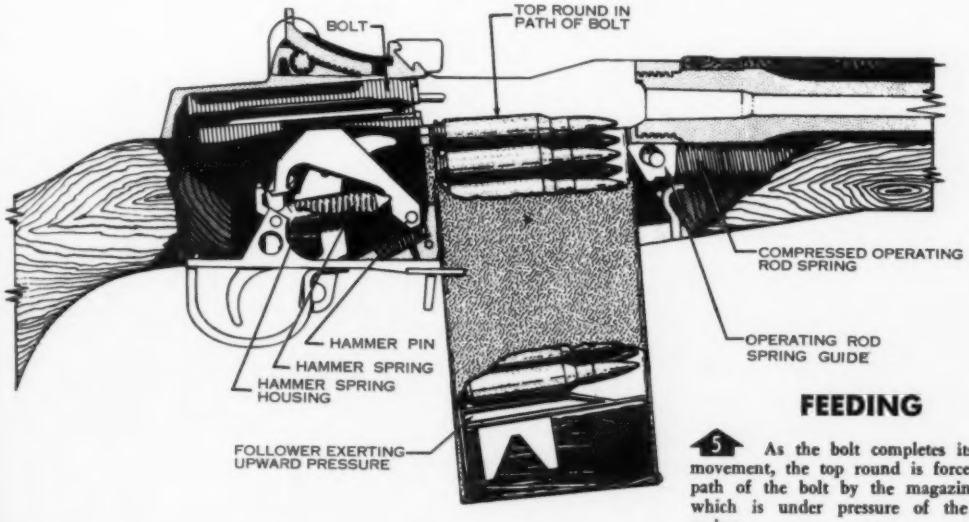


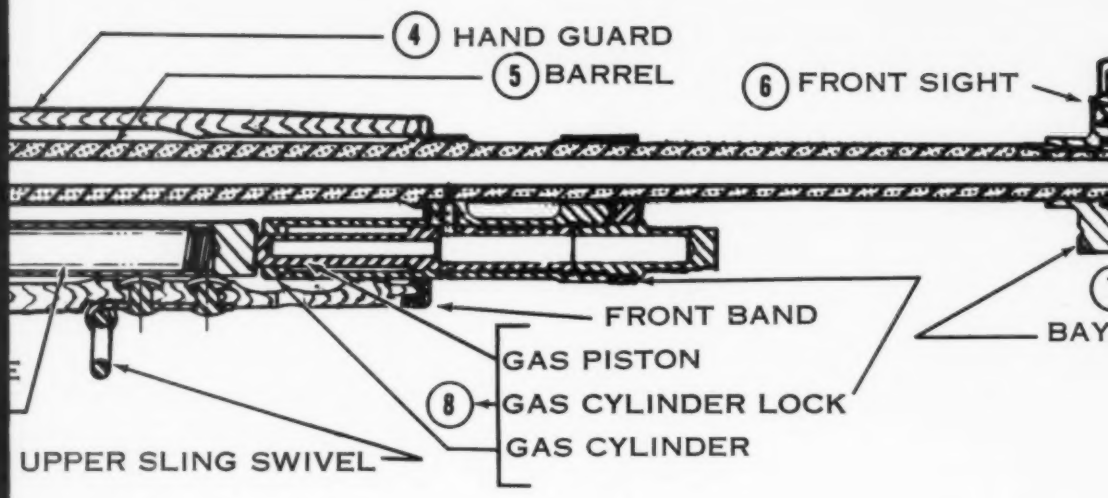
UNLOCKING

2 As the bullet passes the gas port, a small amount of gas fills the hollow gas piston and the gas cylinder plug; the gas expands and drives the piston to the rear carrying the operating rod and bolt with it.



FEEDING

5 As the bolt completes its rearward movement, the top round is forced into the path of the bolt by the magazine follower which is under pressure of the magazine spring.



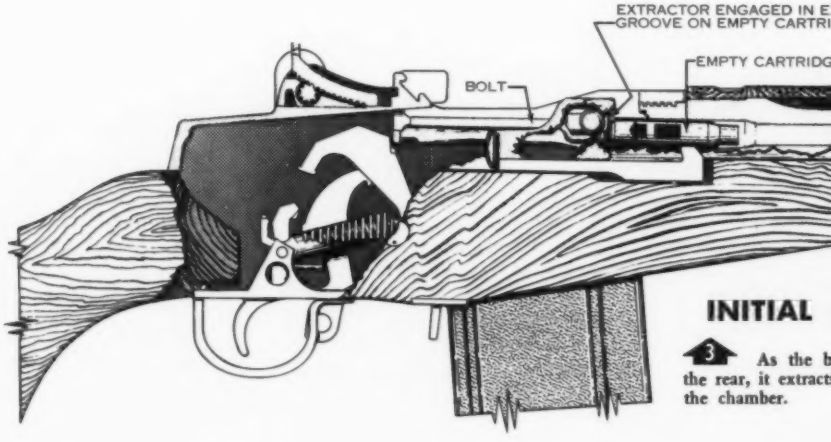
NORMAL MAINTENANCE

1 ELEVATION AND WINDAGE KNOBS OPERATE FREELY AND RETAIN THEIR SETTINGS
2 CHECK FOR EXCESSIVE WEAR
3 CHECK OPERATING ROD SPRING FOR BENDS
4 CHECK HAND GUARD FOR EXCESSIVE CRACKS
5 CHECK FOR PITTING AND EXCESSIVE OIL
6 CHECK FOR LOOSENESS AND BURRS
7 FREE OF CARBON
8 CLEAN WITH BORE CLEANER ONLY. USE NO ABRASIVES. DO NOT OIL INTERIOR SURFACES.

9 CHECK INTERIOR FOR GENERAL CLEA
SPRING FOR TENSION.
10 CHECK FOR DENTS AND CRACKS
11 ENSURE SAFETY IS OPERATIVE

BEFORE FIRING

LUBRICATE:
LIP OF RECEIVER
CAMMING SURFACES IN HUMP OF
LOCKING RECESSES
OPERATING ROD GUIDE ON SIDE O
CHAMBER AND BORE SHOULD BE CL



INITIAL

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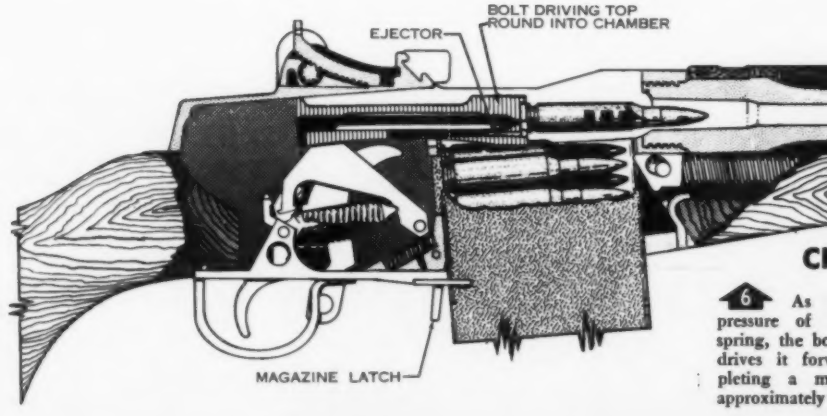

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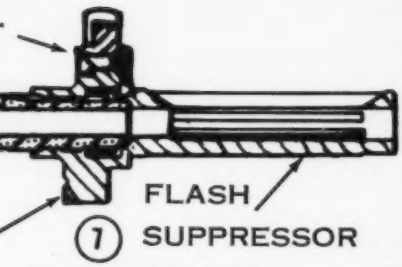


IERAL CLEANLINESS. CHECK MAGAZINE

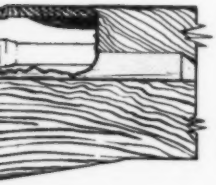
CRACKS
ATIVE

HUMP OF OPERATING ROD

ON SIDE OF RECEIVER
ULD BE CLEAN AND DRY

GAGED IN EXTRACTOR
PTY CARTRIDGE

Y CARTRIDGE



ITIAL EXTRACTION

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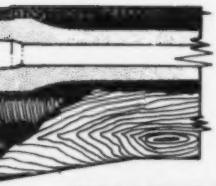

CHAMBERING

6 As the bolt goes forward under
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ives it forward into the chamber, com-
eting a mechanical action which takes
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FELDA
1000
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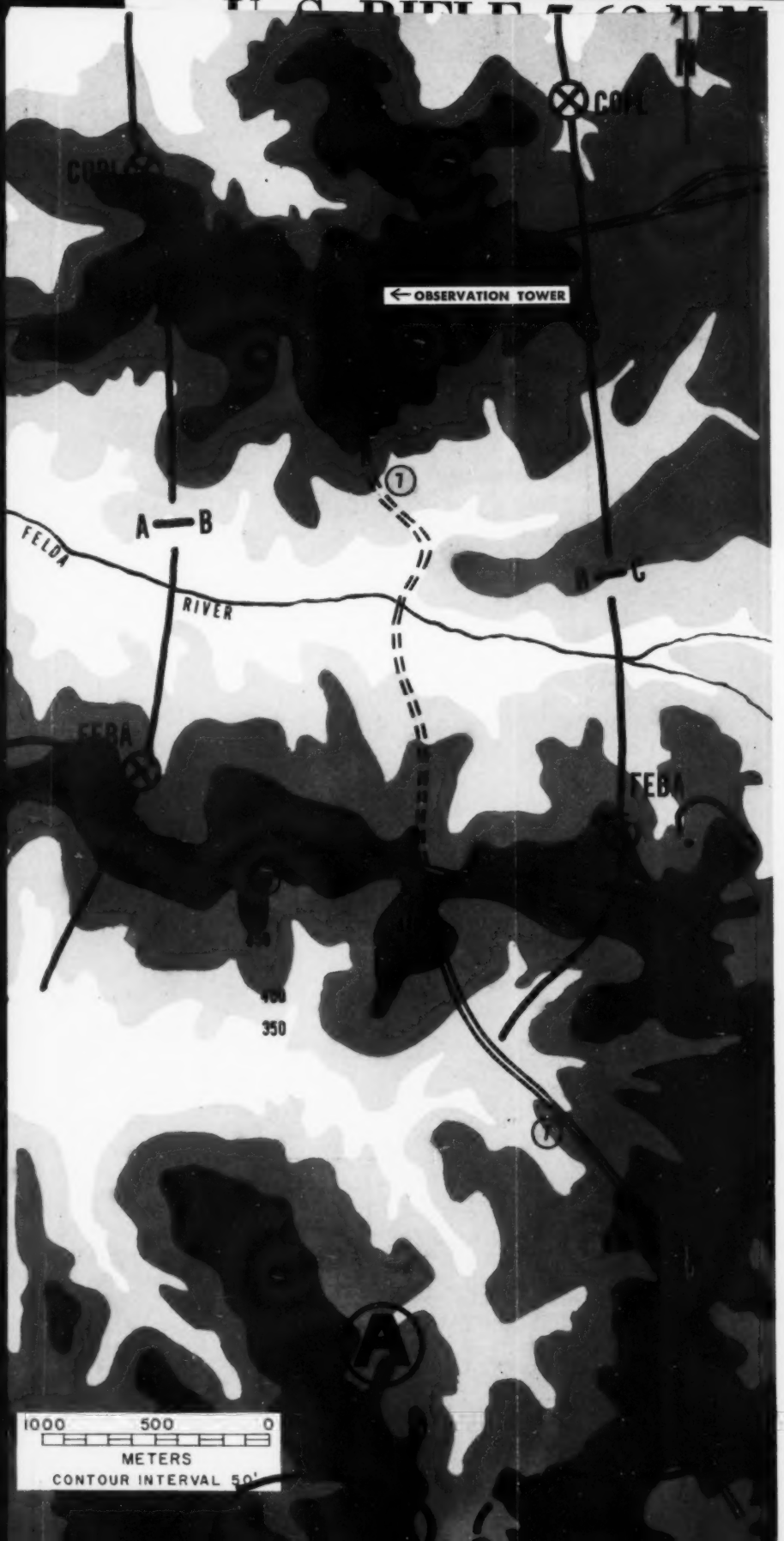


HILL 497

You have taken part . . . attended CPXs. — now put yourself

You are cold . . . tired . . . and a little apprehensive.

This is your first action with Bravo Company and there is perhaps good reason for the tight feeling in your stomach.

As you leave the battle group CP, the commander's parting words turn over in your mind. "We've got to hold this position because our battle group is the kingpin in the division defense . . . and the division is the kingpin in the corps plan. . . ."

What Colonel Bottomley had failed to add (and what you were quick to remember) was that Bravo Company was also the kingpin to the whole shooting match.

As the new commander of Bravo Company, you can't help but reflect on this whole situation. When you reported in three days ago, you were brought up to date on recent battle group actions as well as the current picture . . . and, in a nutshell, the picture didn't look too good.

You climb into your jeep to return to the company CP, and the thought

Lt Slavins

7—YOUR BATTLE

t in "dry runs"
. . . graduated from a score of Army schools
f in this picture. . . .

by Capt Rolfe G. Arnhym

occurs to you that the "Benning solution" would have you making an estimate on what you can and will do in the next 24 hours.

As the German countryside flashes by, you find yourself making this mental estimate that the instructors used to talk about . . . and the realization strikes you that the problem is yours, pure and simple. Moreover, the solution, whatever it is, will have a great impact on the lives of many men—and, in fact, on the future of your unit.

In essence, the battle for Hill 497 (see map) is to be *your* battle. As you glance down at your notebook, Bravo's mission comes into focus: "Defend in sector (a big one for a rifle company); organize and occupy the COPL in sector with one reinforced rifle platoon; organize Switch Position 'W' and occupy this position on order."

From the "big picture" presented at the battle group commander's briefing, you recall that the 1st Battle Group, 87th Infantry (your battle group) will be defending with three companies forward (Bravo in the center) and two in reserve. BG 1/87 is to defend in sector, organize switch positions and be prepared to occupy them (wholly, or in part) or to withdraw through elements of the division which would occupy the switch positions. All in all, the mission promises to be a tough one. You recall, too, that the division commander has established a GOPL (not on our map) approximately 8000 meters north of our intended forward positions. He has also prescribed that forward battle groups establish a COPL.

So the whole defense fits into a tight and (you hope) successful pattern. While the enemy has forced us into the defense, the indication is that it is only temporary.

In any event, there is no point in considering an attack plan now, when we haven't even begun the defense. Besides, the enemy may have his own idea about this.

As your jeep rolls along the rough country road, you remember the S2's parting shot about the enemy. They are now in contact with the corps

MSgt Davis

covering force some 20 kilometers to the northeast. The enemy can achieve air superiority—at least for limited periods—and they have the capability of employing nuclear weapons (as we do). Even though neither side has employed nuclear weapons in our division sector, it *is* a consideration. In any event, you know that your defense will be prepared for any eventuality—nuclear or not.

Your mind turns to other things as you glance at your watch. It is now 1000 hours and the indication, according to the S2, is that the enemy will be in contact with your unit by nightfall (2015 hours). Thus, you have approximately 10 hours to get Bravo Company in position and ready to fight.

For a new company commander, this is no small problem. Fortunately, though, you have much help. You have learned from your predecessor, that your platoon leaders are strong and reliable. Lt Slavins (1st Platoon) is aggressive but lacks battle experience. MSgt Davis (2d Platoon) is tough and capable, but appears to be reluctant to exercise his authority. Lt Mann (3d Platoon) is forceful, capable and has considerable combat

Lt Mann

experience. The weapons platoon leader, Lt Bates, is intelligent and willing, but apparently requires considerable guidance. Your XO, Lt Thomas, is a good administrator and organizer. All in all, you have a good crew. With your company at 93 percent strength, it should give a good account of itself.

As your jeep pulls up behind Hill 497, you notice the other vehicle is still following you. In it are the people who accompanied you to the battle group CP to receive your order: the weapons platoon leader, an FO from the battle group heavy mortar platoon and an FO from the artillery battalion in direct support.

When your jeep stops, you notice the tank platoon leader who was in-

structed to join you here for your reconnaissance. If all goes well, you should be able to finish your reconnaissance and brief him and your platoon leaders by 1100. According to your previous instructions to the XO, the platoon leaders should meet you here at that time.

Meanwhile, the company, under the control of the XO, will be moving forward to Hill 497 from their assembly area near Switch Position "W." Time-wise, your plan should work out nicely with the unit moving into position by 1200 hours.

So here you are on a reconnaissance of Bravo's future defensive positions—and you are now on your own with only a map, some notes and your prior experience to lean on.

As you look at your map and your notes, you evaluate your mission and what you have to work with. The BG commander has attached a platoon of tanks to Bravo for employment on the COPL only. Also attached are two assault weapon (SS10) squads, one short-range radar (AN/PPS-4) team and four armored personnel carriers which are attached for operational control only. The BG commander plans to employ the heavy mortar platoon barrage and an antitank minefield (200 meters wide and 100 meters deep) in your sector. Of course, you will recommend the exact location of both.

Information from the BG S2 revealed that the Felda River in your sector is fordable to foot troops.

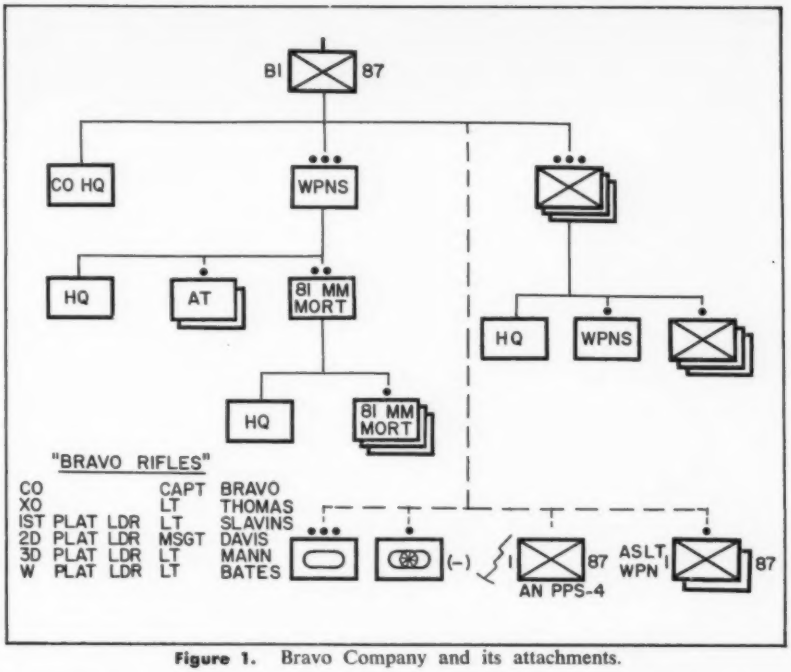


Figure 1. Bravo Company and its attachments.

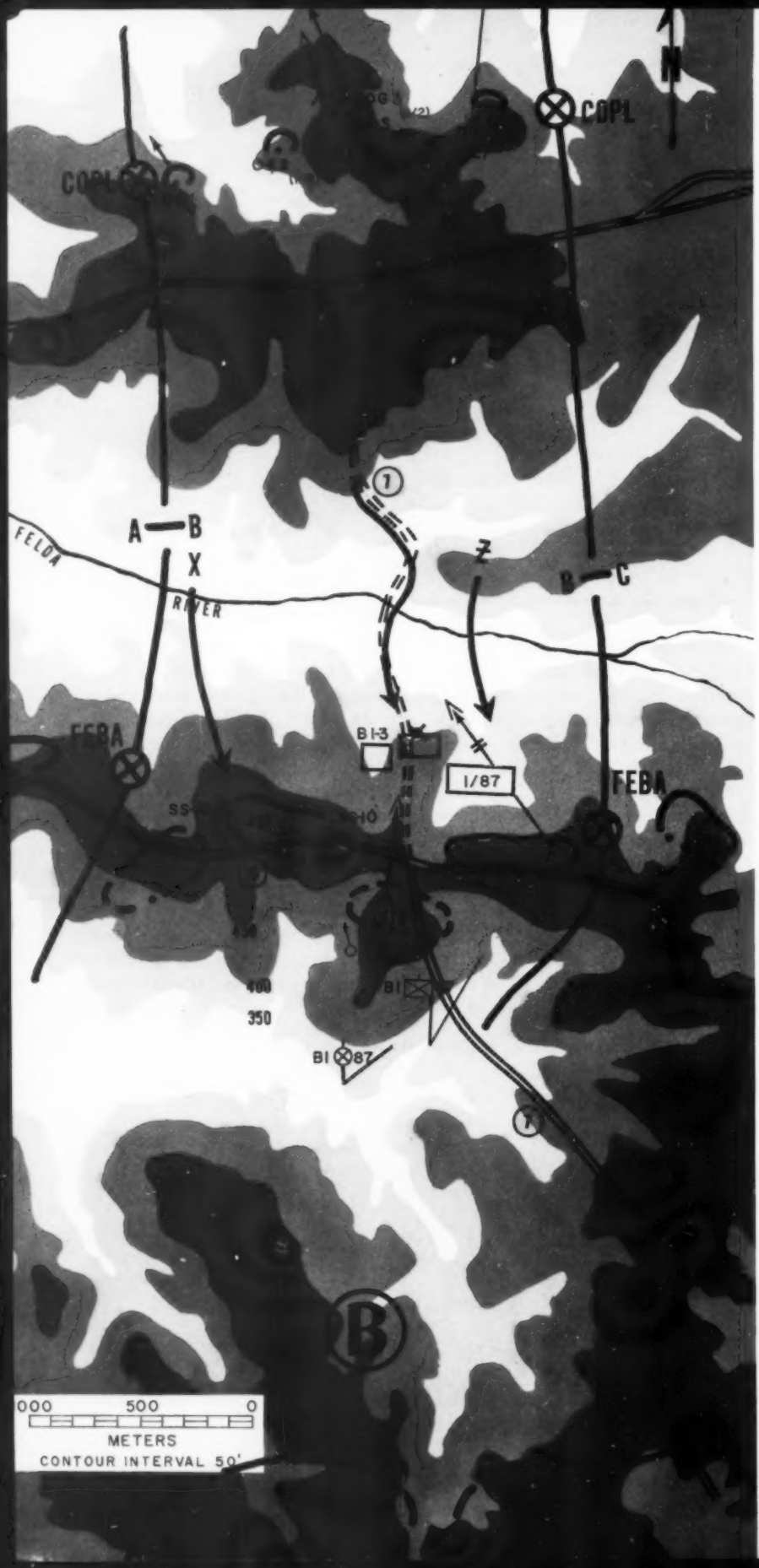
However, it is not fordable to tracked or wheeled vehicles (at least without extensive engineer effort) except at the ford where the trail in your sector crosses the Felda.

The terrain on the near side, 200–400 meters from the Felda, is suitable for movement of armor vehicles. The tank commander should be happy to hear this. Lateral trails exist throughout the rear of the battle group area, and the trafficability of the terrain offers no restriction to vehicles.

This, then, is the situation confronting you. The pieces of the defensive jig-saw puzzle are all there, and it's now up to you to put them into place. You have a clear picture of the terrain and the forces available to you. You know the mission, and also something of the enemy. After looking at your map (Map A), your rifle company organization (Figure 1) and the terrain (Figure 2), you are ready to go to work.

When you have drawn in your solution on Map A, including platoon positions, weapons positions, minefields, concentrations and barrages, turn the page to see how Captain, Company B, did the job.

Figure 2. Your reconnaissance begins atop Hill 497, as you look toward the north . . . .



The Solution

Even though you undoubtedly have the "school solution," we thought you'd be interested in seeing how Captain Bravo approached this problem. This was his solution for the defense of Hill 497:

Captain Bravo applied the normal troop leading procedures wherein he thoroughly planned his work—and then worked his plan. After making his reconnaissance and receiving recommendations from the heavy mortar FO, artillery FO and the tank platoon leader, Captain Bravo formulated his plan and then issued his order to his platoon leaders.

He had initially made a mental time schedule to allot time for his reconnaissance and planning and for the reconnaissance and planning of his subordinates. He had also arranged for the forward movement of his company so that when it arrived, the troops could immediately begin preparing the defensive position.

In the time between his reconnaissance and the issuance of the order, Captain Bravo had many factors to consider before he put the pieces of the defensive puzzle together.

Captain Bravo began with his estimate of the situation—not necessarily the long, five-paragraph type—but one which would allow him to put the four major considerations of mission, enemy, terrain and troops available (METT) in the proper perspective.

He considered the following as critical terrain in his area (Map B): Hill 497, which controls a major portion of the Route 26 ridge in Company B's sector; Hill 470, which is in rear of and overlooks the key road junction; and that portion of the ridge in Company B's sector which is east of the road junction and dominates the right flank.

As Captain Bravo saw it, there were three major avenues which the enemy could use. Approach "X" provided a ridge approach beginning at the river and leading to Hill 497. This avenue had good concealment

and some cover in the adjacent draws.

Approach "Y" included the ridge following an unimproved road (Route 7) and the draw west of this road. This avenue furnished a high speed approach for Armor to the critical terrain. The ridge possessed little or no cover and concealment for dismounted Infantry. The draw west of Route 7 provided cover and concealment. Approach "Z" was a large draw offering considerable cover and concealment and led not only to the dominating terrain in Company B's sector, but also to the vital road junction as well. Approaches "Y" and "Z" were, in essence, one major approach which an attacker might use when employing Infantry and Armor.

Having determined the critical terrain and the approaches to it, Captain Bravo selected primary platoon positions to block these avenues of approach. The left platoon was positioned to block Approach "X." This platoon could also block the draw west of the unimproved road which was part of Approach "Y." The generally open terrain and the direct fire weapons which could be employed in the first or left platoon position permitted occupation of a large area. The second or right platoon was positioned to block Approach "Z." This platoon could also direct fires which would block Approach "Y," at least to a degree. The configuration of the terrain, nature of the approach and limited fields of fire did not make feasible the positioning of elements astride Route 7, forward of Route 26. Of the approaches, Captain Bravo determined that Approach "Z" was the most dangerous due to its width and direction. He assigned this approach to the 2d Platoon, counting on MSgt Davis (who had considerable battle experience) to provide the best possible defense.

Mutual support was also an important consideration for Captain Bravo in this situation. Because of the large gaps between the forward platoons and on each flank of the company, the exchange of machinegun fire of single guns was planned between platoons and with adjacent companies. To provide additional fire, automatic rifles were positioned to cover the same general sectors assigned to each machinegun. While full mutual support could not be obtained between platoons, this was compensated for by greater attention to indirect fire, barrier planning, security and the use of surveillance devices.

To effectively block Approach "Y" and to achieve depth to the defense, the primary position for the reserve platoon was placed on Hill 470 (to the rear of the road junction). Thus positioned, the reserve platoon could reinforce the fires of the forward platoons and cover the gap between them. The position also afforded excellent fields of fire along Route 7. This platoon was placed well forward, since, if it were positioned more than 450 meters from the FEBA, it could not render effective support of the forward platoons by fire. Captain Bravo selected the 3d Platoon, commanded by Lt Mann, to do this job. He did this after a consideration of the missions to be assigned the reserve in this situation. Forceful leadership would be required for the COPL mission, for patrolling and the preparation of two key positions. Additional depth to the company's defenses was provided by the preparation of a supplementary position on the left flank; this further blocked Approach "X" and could also be occupied in the event a threat developed in the adjacent unit area. Obviously, Captain Bravo had planned for every eventuality.

The most dangerous avenue of approach in Company B's sector was Approach "Z." This low-ground approach, offering considerable cover and concealment, would be difficult to defend with flat trajectory fire. Plans were therefore made to employ mines and wire obstacles, along with abatis, to impede enemy mo· ment. Additionally, Captain Bravo employed the 300-meter-wide heavy

Capt Bravo

mortar platoon barrage to block this approach. The barrage, as located, not only blocked Approach "Z" but also blocked a portion of Approach "Y." Concentrations for all indirect fire weapons were also planned along the avenues of approach, in gaps between platoons and within the battle area.

Captain Bravo realized that the next most dangerous avenue of approach in Company B's sector was Approach "Y." The 100-meter-wide 81mm mortar section barrage was employed in the draw west of the road to assist in blocking this approach. Both barrages (4.2-inch and 81mm) were planned so that the near edge of their effects was not more than 200 meters forward of the forwardmost troops.

CAPT ROLFE G. ARNHYM is a 1953 graduate of the United States Military Academy. After attending the Basic Infantry Officer Course, he became a company commander in the 145th Infantry Regiment at Camp Polk. He then served as aide-de-camp to the commanding general of the 10th Infantry Division. In 1955 Captain Arnhym became company executive officer and, subsequently, company commander, assistant battle group S3 and battle group S1 with the 87th Infantry in Europe. After attending the Infantry Officer Advanced Course in 1958, he was assigned as an instructor in the USAIS Command and Staff Department. Captain Arnhym's previous contributions to *Infantry* include "Electronic Eyes and Ears" and "The Battle Group Heavy Mortar Platoon."

Finally, the antitank minefield was employed as indicated on Approach "Y" to deny this avenue to enemy armor. By the use of a minefield and the 81mm and 4.2-inch mortar barrages, Approach "Y" and the adjacent ridges and draws were thus blocked. Coordination was effected with Company A on the left to place tactical wire and antipersonnel mines in the draw left of Approach "X."

The company commander's flexibility was considerably enhanced by

Bravo's solution

the mobility and additional communications provided by the attached armored personnel carriers. Initially, the carriers were attached to the force on the COPL. Following withdrawal of the COPL, the carriers were employed in general support, occupying an assembly area in the vicinity of the reserve platoon. Captain Bravo made full use of carriers for evacuation of wounded, patrols, rear area reconnaissance, security and for moving the reserve to supplementary positions.

Considerable flexibility was provided by employing attached and organic supporting weapons in general support. Based on recommendations from Lt Bates, the weapons platoon leader, the 81mm mortar section was employed in general support, occupying a covered and concealed position in rear of the reserve platoon. From this location the section could mass its fire throughout the company sector. The position was located to permit long-range fires and yet was far enough to the rear of the FEBA to permit fires within the forward platoon positions in the event of a penetration. The employment of the mortar section in general support provided fire immediately responsive to the company commander and permitted massing and shifting of fires as quickly as the situation required. Initially, one squad was attached to the force on the COPL.

Captain Bravo also made full use of the two attached assault weapon (SS10) squads. He realized that the primary mission of these weapons was antitank defense, and the technical characteristics of the weapons required that they be employed near dominating terrain to provide the best possible observation and long-range fields of fire. Accordingly, he employed them from positions in the left platoon defense area where the squads could cover Approach "Y" and provide antitank protection to the left flank as well. Since they were employed in general support, the squads could be moved by the company commander as the situation required. Initially, one squad was attached to the force on the COPL.

The 106mm recoilless squads were also employed in general support; one squad was located in the right platoon area to cover Approach "Y" and provide antitank protection to the right flank. The company commander thus provided first for lateral antitank protection and then strengthened antitank defense in depth by positioning one 106 squad in the reserve platoon area. From this position, the squad could readily cover Approach "Y." Initially, this squad was attached to the force on the COPL. To add to the antitank protection, each rifle platoon leader positioned his weapons squad's rocket launcher where it could cover the most dangerous armor approach into the platoon area. This was done, of course, after considering the location

Lt Bates

of other antitank weapons.

In positioning the company CP, Lt Thomas, the XO, selected a site offering concealment from enemy ground observation and protection against direct fire weapons. Sufficient covered and concealed routes were available to the front and rear to facilitate communication with forward elements and the parent battle group.

The location selected by Lt Thomas for the company distributing point (CDP) was such that it provided concealment from enemy ground observation, protection from enemy direct fire weapons and convenience to forward elements. The location of the CDP facilitated resupply by being near a good route forward and to the rear.

During the conduct of the defense, Captain Bravo located himself where he could best influence the action. He selected an OP on Hill 497 which could be utilized in conjunction with a platoon OP in the right platoon's area. Communication between OPs provided information of the enemy throughout the company area of responsibility.

Security was of particular importance to the company commander since he had been assigned a large area of responsibility. Active and passive measures were planned to protect the company against observation, harassment or surprise by the enemy. Maximum use was made of patrols and observation posts. At Captain Bravo's direction, patrols operated between the FEBA and the COPL and within the battle area as

well. Active patrolling in areas not occupied by troops assisted in preventing infiltration by enemy elements. During darkness and other periods of reduced visibility, extensive use was made of additional means such as listening posts, radar, warning devices (trip flares) and infrared equipment (metascopes and sniperscopes). The attached short-range radar team was positioned in the vicinity of Hill 497. From this location, surveillance was possible over all major approaches leading into Company B's area. Since the AN/PPS-4 is a line-of-sight device, it, of course, required a position similar to an OP. To fill in any gaps in this radar screen (in valleys, heavily wooded areas, etc.), Captain Bravo made full use of listening posts and other warning devices. In this unit, security was more than a principle of war—it was a necessity for battlefield survival.

Captain Bravo understood full well that his principal echelon of security was the combat outpost. He had been directed to occupy and organize the COPL with one reinforced rifle platoon and had been given a platoon of tanks for employment on the COPL. He assigned this COPL mission to Lt Mann, principally because his platoon was at full strength and had all battle-experienced squad leaders who would be able to act on their own initiative should the situation require it. To provide this platoon with armor-protected mobility, the company commander attached four armored personnel carriers to the COPL force.

Lt Mann organized the COPL into four outguards. Outguard #1, a full squad, was positioned to provide observation of an unimproved road and ridge approach leading into Company B's left flank. To provide close-in protection, a 3.5-inch rocket launcher and a machinegun from the weapons squad were attached. A carrier was also attached to provide transportation in the event of a withdrawal.

Outguard #2, a half-squad, was positioned primarily to provide coverage of the heavily wooded draw. Limited observation prevented fully effective employment of direct fire weapons, so the only attachment made to this outguard was a carrier.

Outguard #3, a half-squad, had excellent observation to its front and flanks. The platoon CP–OP was located here since the position covered the most likely avenue of approach. One carrier was attached to this outguard. A tank section, assault weapon squad and 106mm recoilless squad were also positioned in the vicinity of OG #3 to take advantage of the long-range fields of fire along the most dangerous avenue of approach. These direct fire weapons

Lt Thomas

could readily be used in their secondary roles to fire on targets of opportunity such as grouped enemy personnel, crew-served weapons and enemy wheeled vehicles.

Outguard #4, a full squad, had a machinegun attached from the weapons squad and also had an attached armored personnel carrier. This outguard was positioned to furnish observation of the ridge approach to its front and the right flank. A section of tanks was employed with this outguard to provide long-range antitank fires.

To furnish the COPL with an indirect fire capability immediately responsive to the outpost commander, an 81mm mortar squad was attached and centrally located in a covered and concealed position near a good route for resupply.

To provide the combat outpost with a surveillance capability during periods of limited visibility (and one commensurate with the available fire support), a short-range radar team was attached to the COPL and was employed in the vicinity of OG #3. Maximum observation of the area of responsibility was possible from this location. This device thus provided early warning and detection of troop movements up to 3500 meters and vehicular movement up to 6000 meters.

The positions occupied along the COPL (including the direct and indirect fire weapons attached and the available surveillance means) permitted Company B's combat outpost to provide early warning of the enemy's advance. Additionally, it was able to delay and disorganize the enemy and also deceive him as to the true location of the battle area.

When the company commander prepared his plan for the defense, he also analyzed his positions to determine vulnerability to nuclear attack. In this respect, Company B's positions were more than adequate. In spite of the fact that each forward platoon occupied an area slightly in excess of 550 meters, there was still maximum dispersion provided consistent with the performance of the mission.

When nightfall finally came upon the troops on Hill 497, everything was in position. The leaders had checked and rechecked their defenses, and when the platoon leaders reported in, there was little doubt that Captain Bravo's company was not a "Late Company B" . . . it was on time and ready to fight.

This, then, was Captain Bravo's plan for the defense of Hill 497. On the surface, there was nothing complicated about putting the pieces of the defensive puzzle together. All it required was a keen professional knowledge of the commander's tools —people and weapons—and an effective use of them on the soldier's workbench—the terrain.

The finished product—for the commander who had mastered his trade —was success on the battlefield.

by Capt Ferdinand Q. Epps Jr.

SPARKS from the Commo Shack

A few tips to keep your "voice of command" loud and clear.

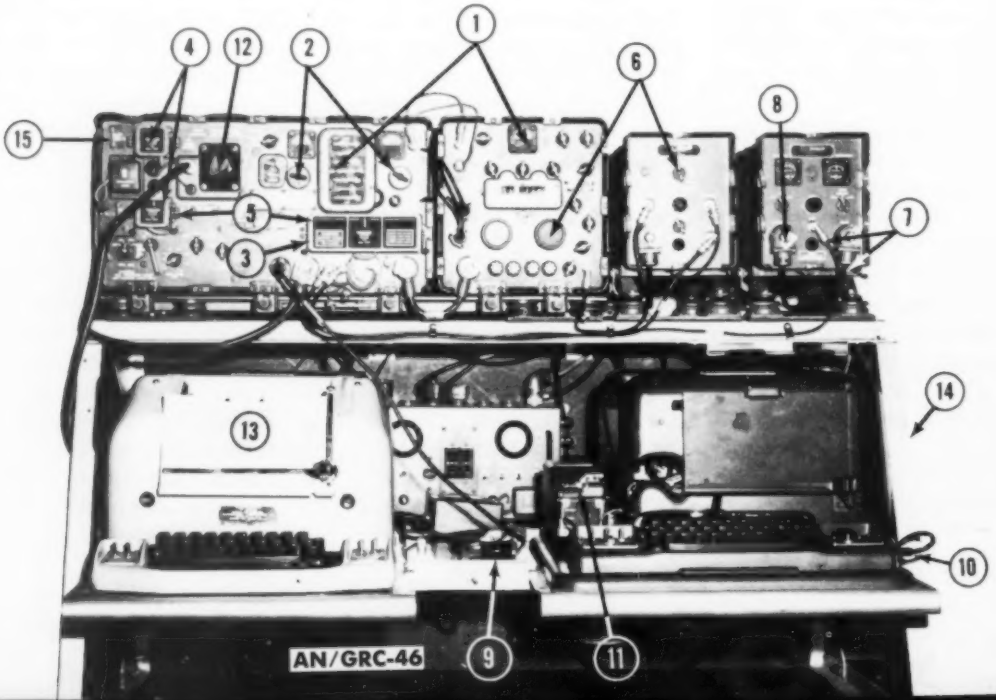
"For want of a nail the shoe was lost. . . ." Trite? Perhaps. Pertinent to communication equipment? Absolutely! A bolt loose here, a leak there, a corroded connection or two, and the battle may well be lost through communication failure. . . . A failure that can be avoided.

Maintenance is a command responsibility and at battle group level is aimed at prevention: stopping minor troubles from growing into major problems. First echelon maintenance can be summed up in a few words—FEEL, TIGHTEN, INSPECT, CLEAN, ADJUST and LUBRICATE. Caution must be exercised in their application, however. Screws, nuts, knobs and similar connectors must be tightened just enough to do the job. Adjustments must be made only in specifically authorized cases and lubrication must follow appropriate Lubrication Orders.

Read and use the checks in this month's *Sparks* and keep your communications loud and clear.

CHECK LIST FOR AN/GRC-46

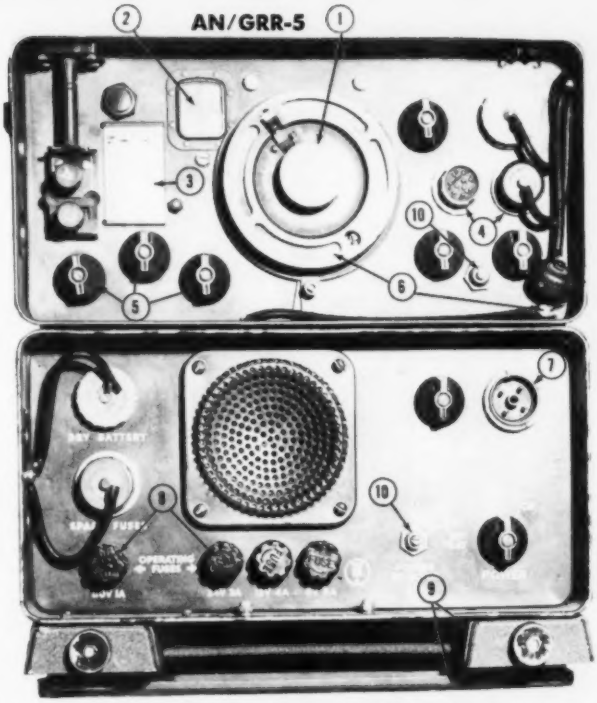
1. Dial and meter windows secure, graduations and figures clearly readable through windows.
2. "T" lugs, when tightened, lock dials in place.
3. Air filter clean.
4. Exhaust ports unobstructed.
5. Rubber gaskets under air filter cover and air exhaust neither hardened nor cracked.
6. Switches and knobs securely fastened but not so tight as to prevent functioning.
7. Cables free of cracks, cuts and frays; connections secure at both ends.
8. Wing screws hold connections securely when tightened in place.
9. Hand set uncracked, with rubber cover securely fastened over push-to-talk switch. Moisture cover over transmitting element.
10. Jacks and plugs on teletypewriter equipment clean and polished.
11. Tape chute clean and free of any foreign material.
12. Rubber grommet in place on antenna binding post.
13. Check teletypewriter for PM Indicators listed under teletypewriter AN/PGC-1.
14. Mount uncracked and securely fastened to shelter.
15. Spare fuses present.



CHECK LIST FOR AN/GRR-5

1. Tuning knob operates freely.
2. Dial window neither cracked nor obscured.
3. Channel chart clean (unless radio is in operation).
4. Audio connections clean, free of rust and corrosion (Audio connection covers firmly attached to radio).
5. Switches and knobs tight but not so tight as to prevent functioning.
6. Pre-set wrench firmly attached to radio and shoulders of pre-set studs unrounded.
7. Input connection clean, free of rust and corrosion.
8. Fuse holders hold fuses firmly.
9. Radio securely fastened to mount and mount securely fastened to vehicle.
10. Shoulders of power selector switch and output switch unrounded.

AN/PGC-1



CHECK LIST FOR TELETYPEWRITER AN/PGC-1

1. Case must not have any structural defects, i.e., punctures, cracks, loose reinforcement. (Equipment should be spot painted where necessary.)
2. Dust cover must not be dented or bent out of shape and plastic window must not be cracked or obscured.
3. Message holder is unbent, operates freely and supplies spring tension to hold message in place.
4. Operating instructions present and plainly readable.
5. Keyboard operates freely. (Have operator transmit this test message: The quick brown fox jumped over the lazy dogs, back, 1 2 3 4 5 6 7 8 9 0 -- $ 1 " / : ; ? . The printed characters should be uniformly clear, in perfect horizontal alignment and evenly spaced.)
6. Ground leads firmly connected.
7. Low supply of paper is indicated by *red* appearing on margins of paper.
8. Spare rolls of paper on inside of case cover.
9. No dust, oil, dirt or scrap paper accumulated in teletypewriter base plate.
10. Keyboard lock secures keyboard.

CAPT FERDINAND Q. EPPS JR. entered the Army in 1949. After graduation from OCS in 1952, he became executive officer of Company A, 42d Tank Battalion. He subsequently served as regimental communications officer and as a company commander in the 17th Infantry Regiment in Korea. Captain Epps completed the Infantry Officer Advanced Course in 1959 and is currently serving as an instructor in the Communication Department, USAIS. He is a regular contributor to *Infantry's* "Sparks From the Commo Shack."

On Target!

by Capt Ruben W. Shay

IN AN era of missiles, space travel and "Sputniks," few of the dramatic breakthroughs which are accepted as evidence of military progress seem to relate directly to the Infantryman. But this is only how it seems.

Although they may not be as highly publicized, Infantry has, in fact, a greater share of breakthroughs than it generally realizes. Research and development programs have by no means ignored the Infantryman, and a variety of advances have been achieved which have made the Infantryman a more potent fighter.

A good example of the little publicized yet very important breakthroughs relating to Infantry is in the area of training soldiers to find battlefield targets.

Finding targets on the battlefield, of course, seems deceptively simple. You see them and you fire at them. For many years, our marksmanship training accepted this false simplicity of combat firing. Soldiers were put through the highly systematized and inflexible ritual of known-distance firing at well-defined, clearly visible targets, and thus they emerged as "combat riflemen."

Yet the fact is that they were trained to achieve a certain degree of accuracy on a range, and that is all. They had been taught to hit a target like no target ever found on a battlefield—under conditions never present on any battlefield.

In effect, our marksmanship program may have missed its mark. For when the riflemen got to the battlefield, their performance was not fully satisfactory. S. L. A. Marshall's reports, in particular, point up the difficulties our known-distance firers had in Korea. He goes so far as to identify a moral factor which kept our soldiers from firing even when they saw the human target.

A significant Infantry breakthrough, Trainfire I, is aimed at correcting these deficiencies. It is intended to produce combat Infantrymen who not only have the ability to hit what they aim at, but also the ability to find their targets and the willingness to engage these targets, once found.

Specifically, it is the target detection phase of Trainfire I which teaches the soldier to locate combat targets and accustoms him to the necessity of regarding other human beings as proper targets.

Target detection does not necessarily mean that the soldier must *see*

For the rifleman to kill, he must first find his quarry. Here is a new technique for bringing him "on target."

all the targets he engages. Instead, the rifleman must *know*—either by actually seeing the target, or by seeing or hearing certain target clues—where his target is. He must accurately locate it, mark it and estimate the range to it. And then, of course, he must hit it.

In target detection, much obviously depends upon the eyes. Experience has demonstrated that the ordinary person makes little use of his visual capabilities. He does not know what to look for, nor how to look for it. Accordingly, the combat rifleman must be taught to see, and this is an important task of target detection. With experience and training, the soldier learns that there is actually more to be seen than he had imagined.

There are four main premises which serve as the foundation of our target detection training. They are, first, that in combat the range to a rifleman's target rarely exceeds 300 meters; second, that a rifleman seldom sees his targets except in the close assault; third, that he may detect his targets through smoke, dust, flash, noise or movement, but that he will see them only in a fleeting manner; and, fourth, that even though he sees them in a fleeting manner, the rifleman can effectively engage these targets through the use of a nearby object as a reference point.

Most people can be taught how to hold a rifle, aim it, fire it and obtain a reasonable number of "killing" hits on a relatively large target—provided the target is stationary, the view is unobstructed and the target is well enough defined to be easily located. But when the trainee who has this kind of proficiency gets into battle, it is an entirely different matter. He is fired upon, but he cannot return the fire because his target is no longer fully exposed and stationary. This target is another individual who can also think and reason, and can employ all the evasive methods and techniques known to any soldier.

In the past, this transition from a training target to a combat target was often so great that many riflemen were initially unable to cope with it. Those who survived the first day—the baptism of fire—often increased their chances for survival because they learned during this period what they had not been taught before: how to locate the concealed and well-camouflaged enemy through target indications.

Of course, this hit-or-miss method

of obtaining combat riflemen proficient in target detection is not satisfactory. The target detection phase of Trainfire I resolves this by systematizing and regularizing the location of targets through target indications.

As you might expect, target indications are those things which an enemy rifleman does or fails to do that disclose his position. One of these target indications is sound—a rifle report, a canteen rattling, a helmet clanking, or any of the other common noises, caused through necessity or carelessness, which result as the enemy performs his duties. Sound is the most difficult and erratic target indication because it will not normally pinpoint a target but will only indicate the presence and general direction of this target on the battlefield. Later we will see how a well-trained rifleman can effectively engage a target which presents him with only the indication of sound.

Movement is probably the most common target indication. A motionless target is extremely difficult to locate, especially if it is well camouflaged. But in order to observe, to shoot or to advance, the enemy has to move. If he performs a slow, deliberate, correct movement, he is still hard to locate. But if he is not well trained, or becomes careless and performs a rapid, jerky, incorrect movement, he is easily located, because the observer's eye is immediately attracted by this kind of motion.

The third target indication results from lack of, or improper use of, camouflage. Shine or lightness may come from brass, exposed skin, clothing and so on. Regular outlines or contrast with background may also give away the enemy rifleman.

Besides what target indications to look for, the combat rifleman must learn how to select proper observation positions. The considerations he must keep in mind are, first, a position high enough to enable him to observe adequately his entire sector of responsibility and, second, a position which affords him a maximum amount of cover and concealment.

Trainees are taught to detect targets by sound. . .

The next consideration is the combat rifleman's method of searching his area of responsibility. When the rifleman is first surveying his sector of responsibility, he must locate any immediate danger to his front and take prompt action to remove it. This is a basic measure of self-preservation and seldom lasts more than 30 seconds. Then, when he has chosen and occupied his observation position, he must make a thorough and systematic search. For this he uses the 50-meter overlapping-strip method. Estimating 50 meters forward of his position, and starting at either side of his sector, he scans every inch of the intervening area. When he has reached the opposite flank of his sector, he estimates another 50 meters (making sure, however, that this second strip overlaps the first strip already searched) and repeats the process back to the flank from which he originally started. This procedure continues as far as he can see.

A rifleman who masters these three elements—target indications, proper observation position, and method of search—will experience little or no difficulty in locating a combat target. The target detection process, however, does not stop here. Should the rifleman's attention be distracted momentarily, a target once located may be lost again unless he marks it immediately after he has located it, using either an aiming point or a reference point.

An aiming point is an object at which we aim in order to hit our target. Therefore, if the target disappears at, or extremely close to, an easily recognizable object or feature, the aiming point would be used to relocate the point of disappearance of the target and to engage it at that point. However, if the enemy soldier is well trained, he will avoid good aiming points as much as possible. Then the rifleman must use the reference point method for relocating his target. A reference point is an object to which we refer in order to locate a nearby target. Again, it must be an easily defined object or feature in the vicinity of the point of disappearance of the target.

If he loses sight of his target, the rifleman estimates (from memory) the distance and direction of the point of disappearance from the reference point he has selected and, applying the proper amount of hold-off (or Kentucky windage) with his battlesight setting of 250 meters, fires at that point. Obviously, the chances of a first-round hit are slim. It is likely, however, that the target, finding himself discovered and under fire, will expose himself either by returning the fire or by moving to another position. The rifleman then will have an excellent chance of scoring a hit since he is already aiming at a point in the vicinity of his target and need shift only slightly for the kill.

To complete the target detection process, a final element is necessary: the ability to estimate quickly and accurately the range to the target. The old system of computing distance from hypothetical football fields won't

work for the combat rifleman when the target is fleeting or the terrain is rough. His range estimate, moreover, must be made in terms of hold-off necessary to hit the target with a battlesight setting of 250 meters. For speed and accuracy, therefore, the rifleman must learn to judge distance from the appearance of individuals and familiar objects at varying ranges and in different positions, and he must translate range into hold-off with no hesitation. Whatever the terrain, the appearance of familiar objects remains the same at a given distance. And regardless of how accurately range is determined, hits are determined by accuracy of hold-off.

A second means of estimating range, used only in defensive situations, is the rifleman's individual range card. On this he places prominent terrain features, likely hostile target areas and probable avenues of approach, together with ranges to each (measured, if possible).

To teach the elements of this target-detection process to the trainee, a range is employed which is located in a sparsely vegetated area left primarily in its natural state. The sparse vegetation will ensure that trainees can see the targets as they are presented, but leaving the range in its natural state provides essential realism. The range should have a depth of 300 meters and a fan of observation of 60 degrees. The observation line should be long enough to accommodate 25 points. Lettered panels are placed on the range to enable the instructor to divide the range into sectors, and the students to mark a target's location alphabetically.

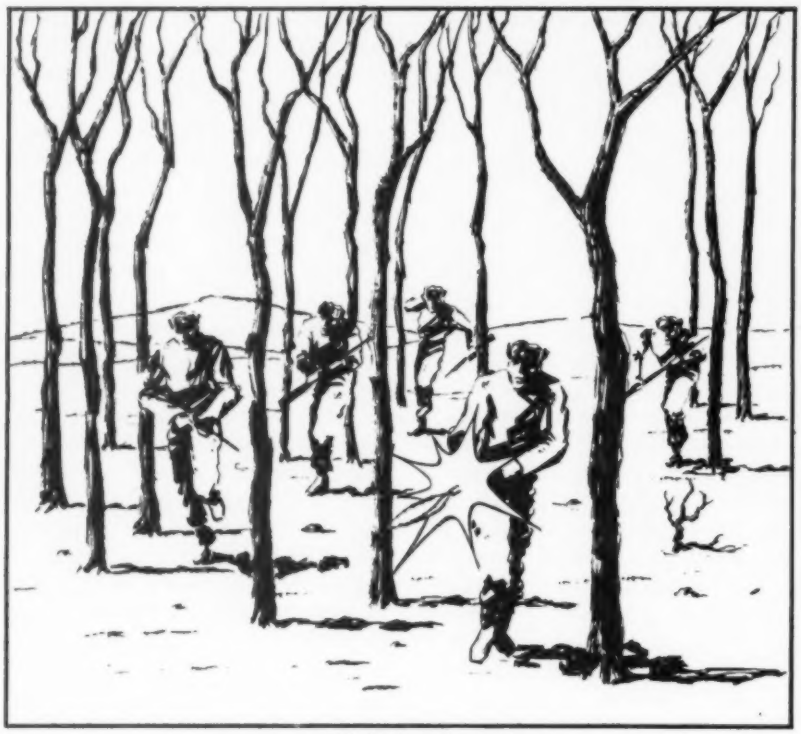
After receiving a general introduction to the purposes of target detection training, the trainee begins the first of a series of exercises designed to teach him the principles of target detection and to give him practice in applying them. He learns initially to locate *single stationary targets* by means of the target indications of sound, movement and the improper use of or lack of camouflage. For maximum realism, live troops are used as "targets." Target men are dressed in conventional or aggressor battle dress and use all the tricks in the book to camouflage and conceal themselves properly.

A number of trials are conducted, each consisting of four 30-second phases. During the first phase, the target man is in a partially exposed position where he is able to see the student on the line at least from the waist up. The student is told in what sector his target is located and must locate it and estimate the range to it within the allotted time. During the second phase, the target performs a slow, deliberate, *correct* movement, raising his head and shoulders enough to enable him to observe the trainee all the way to his feet. During the third phase, the target man repeats this movement, but in a rapid, jerky, *incorrect* manner (or performs it correctly, but has violated camouflage rules). In the fourth phase, the target man will fire one blank round if he is located at a range of less than 150 meters, or two rounds if located more than 150 meters from the observation line.

The next step is the detection of *single moving targets*. During this practical work the trainee must decide when to fire at a moving target. Should he fire while the target is moving, after it disappears, or after it rises again but before it has actually begun its next bound? The factors affecting this decision are explained to the student and are demonstrated during 10 trials in which he actually simulates firing, using a rifle from which the firing pin has been removed for safety. The factors involved include: the speed and length of the target's rush; amount of cover and concealment available to the target; whether or not the target, by rolling or crawling, appears again at a different position from the point of disappearance; direction of target movement; and, finally, the firer's own reaction time.

From single moving targets, the trainee progresses to *multiple moving targets*. Here he develops proficiency at marking points of disappearance of more than one target. To demonstrate this proficiency, he is required to aim four pistol-shaped pointers on an aiming device at the four positions where four target men have disappeared. To begin the exercise, the four target men rise so that all the trainees can see them, then disappear and make their rushes. The trainees follow all four moving targets and, when they hit the dirt again, indicate with the aiming device four points of disappearance. A second trainee is employed behind each observation point as a checker. Each multiple-

. . . sound and flash. . .



. . . or sound, flash and movement.

moving-target trial consists of several of these phases as the target men continue their rushes toward the student. As the instruction progresses, the trainee is faced with targets close together or far apart, varying numbers of targets, targets disappearing at both good and poor aiming points, varying times of target exposure and varying ranges.

Next, the rifleman learns to detect targets by sound alone. Initially he is required to make a range card on which he indicates what he feels to be the 10 to 14 most likely hostile target areas on the range. The student suggestions are discussed, and then panels are raised to indicate the solution. Target men are concealed near the panels, and on the instructor's command, one or two of the target men fire a blank round apiece. The trainee attempts to locate the targets from the sound and is checked when the target men who have fired the blanks rise to reveal their positions. Throughout the remainder of the exercise, the student must locate targets from the direction of the sound emanating from them, using likely hostile target areas as a means of pinpointing sound sources. During the conduct of the trials, sounds occur at varying intervals (and some simultaneously), and the student develops his accuracy at sound spotting.

The student is then given a thorough grounding in individual camouflage and movement—not only so that he can protect himself, but also so that he can learn to penetrate enemy camouflage and to anticipate enemy movement. After basic instruction, trainees are organized into squads, some performing stationary target exercises while others attempt to observe them. Squads rotate in the middle of the exercise.

The most complex kind of target detection, which combines sound detection with detection of multiple moving targets, is taken up during the following period. Here, moving target men receive support from other target men firing blank rounds from stationary positions. Using the aiming device described above, the students mark both sound sources and points of disappearance of moving targets. Students take turns observing and checking, just as they did during earlier multiple trials. Target detection training ends with the review of all practical work and a practical work test on all types of targets.

The basic instruction of the trainee in weapons handling and marksmanship is accomplished in the firing portion of the Trainfire I course. But no matter how accurately the trainee learns to shoot, he will not hit combat targets unless he also learns target detection.

Certainly this training produces a soldier who knows how the human target behaves on the battlefield. Moreover, he learns a series of tested techniques to apply against that target. In addition, he practices these target detection techniques against human targets and gains the proficiency which is so vital on the battlefield.

Thus, target detection is a genuine breakthrough. It creates the all-important link-up between training and combat, and reduces the transition the new soldier must make in his first experience on the battlefield.

To a large degree, then, target detection makes every soldier a combat veteran!

CAPT RUBEN W. SHAY enlisted in 1946 and received his commission through OCS in 1953. He has served as a platoon leader in the 505th Airborne Infantry and as Adjutant, 82d Airborne Division Schools. In subsequent assignments in Korea, Captain Shay served as a company commander and staff officer in the 31st Infantry. He has completed the Airborne and Ranger Courses at Fort Benning and is a graduate of the Winter Mountaineering and Special Forces Courses. Captain Shay is currently assigned as an instructor with the Rifle Committee of the Weapons Department.

This department gives every soldier an opportunity to "sound off" on a wide variety of subjects. It provides an outlet for thinking which need not conform to doctrine or policy. We are interested in constructive ideas — well-conceived and concisely expressed — which challenge or inform. Articles will be paid for at regular rates.

The Last Few Yards

by Col Henry E. Kelly

An examination of current tactical doctrine for the assault of defensive positions indicates that we have three specific areas in need of improvement:

• In our training we over-emphasize the assault of hastily organized defensive positions, giving little regard to the fact that most of the enemy positions will have an obstacle which must be gapped.

• We have not developed flexible assault techniques which can be adapted to assault against either a hastily organized defensive position or one that is well defended by minefields, barbed wire, etc.

• We do not have specific techniques for "developing" hostile resistance to determine which of the two types of defense we will be assaulting.

Collectively, these three areas represent a serious dilemma for the Infantryman. Since the last 50–100 yards in front of the enemy defenses are generally the most critical, it is ironic that we have little to say about how these last few yards should be spanned. It is true that we have specific techniques for assault of *fortified* positions (these are carried under "special" operations). But we do not deal in the same specifics when we talk about the ordinary, everyday type of assault. And the fact is that, more often than not, this ordinary assault will be made against strengthened field fortifications in the course of routine offensive operations.

An examination of FM 7-10 (*The Rifle Company*) reveals some interesting facts concerning our assault doctrine. This manual, in dealing with the conduct of the assault, states that it is launched from the assault line on company order and that the "platoon advances in the assault with squads as skirmishers. The riflemen move forward aggressively firing an aimed shot from the shoulder every 2 or 3 paces at known or suspected enemy positions. Squad snipers participate in the assault like any other riflemen. As the riflemen close with the enemy (less than 35 yards) they move more rapidly, firing from either the shoulder or underarm position without pausing."

Of course, there are other paragraphs which deal with this subject, but they add little to what has already been said. It is apparent, then, that we have a technique for the assault. But is it what we need? And how would this "field manual" assault fare against a defensive position possessing even average obstacles and mine protection? The answer, I think, is obvious. This type of assault is unsuitable except against hastily organized defenses. In fact, if there is no reconnaissance for obstacles and no planned provision for hasty gapping of wire or minefields, the assault could well end in disaster. Of course,

it would be equally disastrous to mistake one defense for the other. Such an error could result in a breakdown of the assault against a mined obstacle or, in the other extreme, unduly deliberate action against a hastily organized, weak position.

From this, it is obvious that we must face up to our dilemma. We must recognize the high probability of meeting minefields and barbed wire in the course of routine operations. And then we must develop, as a part of our tactical doctrine, a procedure for determining the type of defense we face in order to establish the type of assault to be used. Once we have established techniques for developing enemy resistance, we should then work on a flexible doctrine which works equally well against hastily organized or well organized defensive positions.

In the development of flexible assault procedures, we must bear in mind several important considerations: It may well be that even against a hastily organized position the current assault technique should not be invariable practice. When the assault echelon is forced to take up the fire fight before it reaches assaulting distance, it may be advantageous to continue the advance by fire and maneuver to a position close enough to permit the launching of a final short rush. Such a rush should be made at top speed by the riflemen (who do not fire), covered only by the automatic weapons of the assault elements. Under these conditions, it is questionable whether the fire of the rushing fraction is sufficiently effective to offset the increased time involved in closing with the enemy. And finally, we must introduce the obstacle element in all of our training.

As a point of departure for this, I believe that we might take a page from the book of other armies. In their doctrine, many armies lay far greater stress on the assault of organized field fortifications which, though less strong than a fortified position, do require advance provision for developing, gapping and penetrating the obstacles. In the attack of such areas, they often use a combination of *fire and movement* as each platoon penetrates the obstacle through one or more gaps. Compare this with our doctrine which, according to FM 7-10, advocates the "straight-in" approach. Also significant is the fact that other armies do not launch the assault until the obstacle has been passed. In our doctrine, as you will recall, no mention is made of what we do when we meet such an obstacle in the assault.

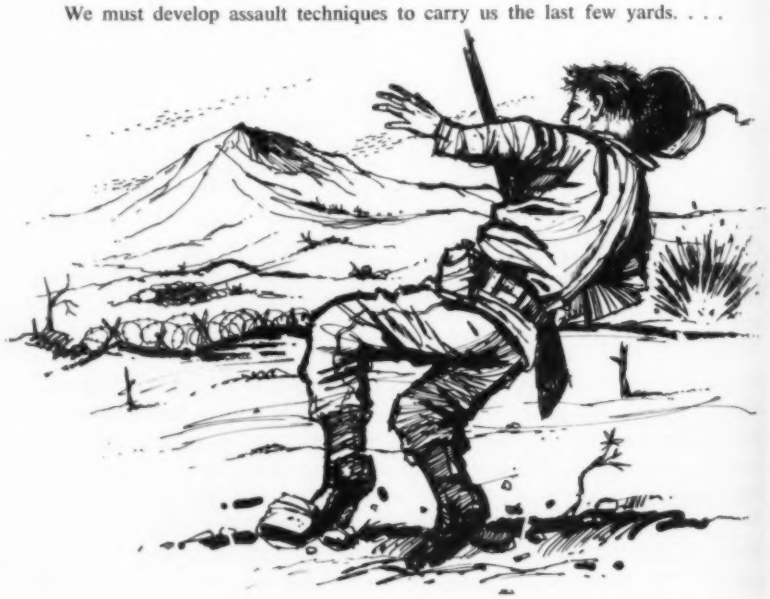
Gapping or passing over such obstacles is practiced by other armies. At least two procedures are used: the first includes use of specially detailed members of assault units to cut gaps in the obstacle *in advance of* the attack. Of course, full use is made of secrecy and concealment (smoke or darkness) to accomplish this. A second technique includes gapping *during* the attack by using specially detailed men or means (e.g., armor or bangalore torpedoes) moved forward as part of the assault. In either case, the attackers must pass through the gaps created while under cover of the assault-force fires. The assault is subsequently launched as debouchment through the gaps is completed.

This doctrine could well be used as a starting point for any new doctrine we might develop. Certainly, as we delve deeper into this subject, we can undoubtedly come up with better answers to all of our assault problems. Until we do provide these answers (and we must), we will be risking success on the most decisive ground in battle—the last few yards before the enemy defense—the assault area.

COL HENRY EATON KELLY (USA Retired) was commissioned in 1917. He then served as platoon leader, company commander and staff officer in the 77th and 1st Infantry Divisions in Europe. He later served with the 55th, 12th and 57th Infantry, and from 1939 to 1941 Colonel Kelly was with the 13th and 14th Infantry in the Panama Canal Zone. From 1943 to 1944 he commanded the 117th Infantry, 30th Infantry Division, in the U.S. and in Europe. In other varied stateside tours, Colonel Kelly has been both student and instructor at the Infantry School and the Command and General Staff College. Before retiring in 1954, he was president of the Infantry Board at Fort Benning. He is presently a military advisor to the Human Research Unit at Fort Benning.

The opinions expressed in this article are those of the author and do not necessarily reflect official thinking of Department of Army or the Infantry School.

We must develop assault techniques to carry us the last few yards. . . .



Rocky Road to Effective Writing

by Mr John Gause
and
Capt H. J. Meyer

Target operators will not expose any part of their bodies above the butts when marking targets or at any other time while firing is being conducted.

Field Manual 23-5

It was bound to happen—Department of Army instructions on how to keep one's topside intact, no less. So what will the platoon clown's next comment be? "We got to keep our shirts on, huh sarge?"

The perplexed sergeant might find a reasonable answer to this question by thumbing through the manual that caused the question in the first place. Let's hope that he will smile when he reads on page 125, "The firer drops the rifle from his shoulder and marks his position on the ground by drawing a 'U' inside his crotch." Tsk, Tsk!

The point is this: When you put a military writer to work with pencil and paper, he sometimes turns out masterpieces of wit and confusion. Generally, both are done unintentionally.

It's hard to produce wit (and we don't need too much of it in military writing, anyway) and it's also very easy to produce confusion. This article may prove this statement. And at the same time, it may help you resolve your writing problems and put you farther along the rocky road to effective writing.

As an example of the type of writing problem we're talking about, look at what the writer of this important bit of instruction on one of our new weapons (the antitank guided missile) is faced with. Try to interpret it. On reading it, you will see that it is "organized" clutter.

"When firing from the ground mount, a hemispherical area with a radius 15 meters to the rear should be clear of all personnel. The direct line distance to the rear of the missile for an included angle of 60° should be increased to 25 meters to prevent exposure to personnel to flying squib wires and exhaust nozzle closure parts."

Wow!

Certainly this information must be important to Infantrymen or it wouldn't have been printed in the first place. No doubt your reaction to it is this: It is dangerous to get behind a missile being fired from a ground mount. Obviously, there are two danger areas: (1) a 15-meter area to the right and left and rearward of the missile; and (2) a 40-meter-deep area that extends 30° to either side. (That's where the squib wires and exhaust nozzle parts will get you.)

Actually the information is too detailed and involved to describe. A picture or diagram can do the job so much better. But for some reason, our military instructors, who are adroit with chalk and blackboard when teaching tactics, fail to recognize the value of a simple illustration when they begin writing something of an involved nature. So they ramble on and on. This results in verboseness. However, all writers are not verbose. Here's an example that gets right to the point (too pointedly, perhaps): "Widow desires roomer. Male preferred."

Some military writing is almost as absurd if you take the time to study and analyze it. These gems have come across the desks of the authors:

"The cylinder, closed at both ends, has a ¾-inch hole drilled in one end."

And "The Battle Group Commander desires a maximum of all officers."

The cylinder example is, of course,

MR JOHN W. GAUSE is a publications editor in the Infantry School's Doctrine Publications Office. After serving in the United States Navy during World War II, he attended the University of Georgia where he received a degree in journalism. He joined the Training Literature Section of DPO following several years spent as a newspaper editor and public information specialist at the Infantry Center. Mr Gause is a past contributor to *Infantry* and is the author of a book on military writing entitled *Guide for the Military Writer*, which was published recently.

CAPT HAROLD J. MEYER is a frequent contributor to *Infantry*. See "Little to Gain —Much to Lose" in this issue.

a ridiculous statement. It just can't be. The second example demonstrates a disrespect for specific words and is, therefore, an utter waste of words. Some readers will claim they understand it, but most will inquire as to what is meant by a "maximum of all officers."

And no doubt the writer of *this* item, which appeared in a recent directive, sincerely believed that it was understandable and well-defined:

"Parents have a serious responsibility to their children to protect them from poisonous substances and should carefully evaluate their homes to search for drugs and chemicals that may cause accidental poisoning giving particular attention to the kitchen and bathroom area."

This 40-word masterpiece wanders around to say one thing: "Keep poison out of your children's reach." It goes without saying that "Parents have a serious responsibility to their children," so why say it? Have any of you "carefully evaluated your homes to search . . ."? Try it sometime—if you have time to waste.

Besides wasting everyone's time, poor military writing can also be dangerous and damaging. In *Command Decisions,* a study (prepared by the Chief of Military History, DA) of the major strategic decisions of World War II, it was revealed that uncertain writing made a big difference at Anzio. The Anzio story goes like this:

"When Allied troops got bogged down considerably south of Rome, it was decided to send a force to Anzio. Allied troops, after landing on the good beaches at Anzio, would then be behind German lines, threatening the main German forces. At the same time the Allies would be in position to attack the Alban Hills, which was the last natural barrier the Germans could use to bar Allied entry into Rome."

Major General John P. Lucas commanded the VI Corps invading force. His instructions were: (1) to seize a beachhead in the vicinity of Anzio, and (2) to advance on the Alban Hills.

Was VI Corps to advance *toward* the Alban Hills, or *to* the Alban Hills? According to the study, the wording of the order was a key to the undesirable situation in which the Allies later found themselves.

This is an instance wherein a precise and definite written order might have changed completely the subsequent course of action of the Fifth Army in Italy.

These examples, as much as they point up a weakness among our writers, prove nothing except that we do have some muddy writers wearing Army Green. Fortunately, these people can be helped with their writing problem—but it will take a lot of self-aid and some buddy-aid. In the following paragraphs you will find four aids—or guideposts—to more effective writing. Here they are:

1. *Edit.* This doesn't always mean outside help. It means that you should reread your own writing more critically. Read it aloud and see if it makes sense. Of course, outside help should be solicited whenever possible. And don't be proud. If the man next to you can't understand what you've written, something is wrong. Take his suggestions and any others you can get, and be thankful for them. Recall the Civil War commander who kept a dull-witted individual on his staff for the sole purpose of reading orders which were to be issued. The commander claimed, "If this nitwit can understand it, everyone will."

Editing can improve your writing. A junior officer who had never written anything except routine correspondence until less than a year ago recently sold his eighth article. He believes in the value of editing.

"The more people I can get to read my material, the better I feel about it," he said. "They pick up obvious errors and are quick to detect grammatical and spelling errors. Just as soon as I recognized the importance of editing, I began to pick up new slants on effective writing."

2. *Encourage.* Share your writing experiences. More experienced officers and noncoms should lean over backwards to help and encourage the younger, less experienced writers. But this takes tact and plenty of it. When a young writer puts down something like "Check for large burrs in the threads of the breech mechanism; these should be replaced," he is proud of it. Each word of this deathless prose shines as a monument to his literary genius. (He is especially proud of the semicolon, for this is the true mark of grammatical know-how.) How do you tell him that he should have written "Replace the breech mechanism if the threads are badly burred," without offending him? (How can burrs be replaced?) One sure way to help correct any writing is to be able to offer positive suggestions to the writer. If you can prove (or at least leave an impression) that you know how to write—well, most of us will gladly sit at the feet of a master. You can best demonstrate your skill by rewriting the sentence or paragraph as it should be.

3. *Read.* First, read everything you can about writing. Then read something to write about. Many experienced writers will unconsciously use a phrase they've read somewhere and remembered. Others may adapt some already-written idea to their needs. When you read enough to do this, you're on the way to becoming an effective writer.

4. *Write.* Welcome the opportunity to get in a little practice. You'll be surprised how quickly you will get to the point where you can knock off that DF in half the time it once took. In writing, like any skill, practice pays off.

Don't take this tip the wrong way. You aren't supposed to hog all the administrative writing in the office, as much as many of us would like to see that happen. Remember tip number 2 and share your experiences with others. Give the junior officers an opportunity to take a more active part in normal administrative chores. Help them to reach the status of effective military writer by encouraging them to write for publication

when they have shown that they understand the rudiments of the game.

These four tips can help to improve the writing of all Infantrymen. "But what about me?" you ask. "I'm already quite proficient with routine administrative writing. I'd like to write for *Infantry*. What do I do?" If you ask these questions, rest assured that you are already ahead of many of your contemporaries. You have the desire and that's half the battle. The next step is to pick up your pen, and, in the best of Putnam penmanship, go to work.

When you do, you will realize a great sense of personal accomplishment. But even more rewarding is the knowledge that a well-conceived idea can contribute immeasurably to the progress of our Army. Probably the best example of this is borne out by the official Army history, *U.S. Army in World War II, The Army Ground Forces,* which cites the impact a magazine article had on the War Department General Staff in 1941. This article, written by Lt Col (later Major General) William C. Lee, appeared in the April 1941 issue of the *Infantry Journal*. In it, Colonel Lee "envisaged the formation of special Airborne divisions"—this at a time when the Army could show nothing larger than a battalion. This same official history goes on to acknowledge that subsequent tactical groups of Airborne troops were, in fact, a monument to General Lee and his writing. And today, among Airborne soldiers, General Lee is known as the "Father of the Airborne."

Thus, writing has its many rewards. And for the individual who is willing to overcome the obstacles, the rocky road to effective writing can be the path to progress, professional recognition and success.

The opinions expressed in these articles do not necessarily reflect official thinking of the Infantry School.

Mortar Magic

by Lt James L. Rabdau

When the rifle company attacks, fires from the supporting 81mm mortars are normally delivered seconds after the fire request is received. But even this fast delivery frequently fails to get the rounds on the target when they are needed. Too often, there is a period of unnecessary delay from the moment a target is spotted until the rounds are "on the way."

Many times, this delay is caused by the elaborate fire-plan overlay which is in present use. Unless a man is capable of memorizing the locations and numbers of concentrations on his overlay, he must spend precious time during the attack deciphering overlay data. This is done while he simultaneously fumbles with his radio and fighting gear. Or perhaps the man who has the overlay is wounded. What happens then, when the unit must call for fires? More fumbling and more delay?

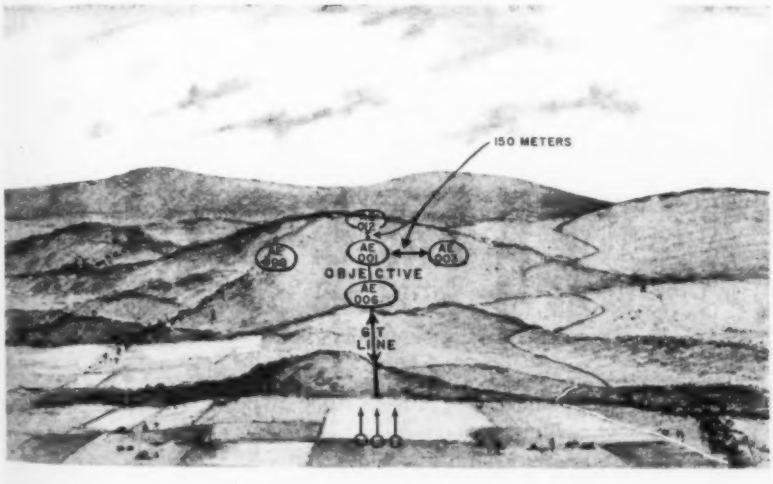
To eliminate this unnecessary delay, a simple, standard pattern of locating and numbering concentrations for the 81mm mortar can be established in the company SOP. By doing this, troops are then able to call rapidly for fires without detailed reference to maps and overlays.

Pictured below is an example of this standard pattern. Using the clock system, concentrations are planned on the objective area and are numbered clockwise with reference to the direction of the gun-target line (12 o'clock being in the direction from guns to target).

Since there are only five concentrations planned, they are easily remembered by anyone needing to call for fires. Only the center concentration (AE 001) requires registering. Distances to the four concentrations surrounding it are equal (150 meters) and a shift to any one of them is easily accomplished. While the center concentration should be in the center of the objective area, it should also be near an identifiable reference point for easy location.

The main object, of course, is to have a quick and easy system for bringing mortar fire on the target. And with the "mortar magic" outlined above, it can be done.

Standard patterns save time.



Yankee Ingenuity in the Deep Snow

The "Ahkio-Machinegun"
is a new approach
to the cold-weather firepower problem.

by Sp5 William W. Church
and Pfc William H. Ney

A .30 CALIBER machinegun, a "beat-up" cargo sled and some "Yankee ingenuity" have been combined at Fort Richardson, Alaska, to solve an old military problem—obtaining a maneuverable, stable, rapid-fire weapon which can be made ready for immediate use in deep-snow combat.

The product of this Yankee ingenuity is, in effect, a "new twist" to an old weapon. It is called an "Ahkio-Machinegun," and involves a somewhat unique design which includes almost all of the desirable features needed for Army use in the far north. The weapon is lightweight, can be moved easily over rough, snow-covered terrain and delivers effective firepower.

Certainly the need for this innovation has long existed. The standard tripod-mounted light machinegun has posed many problems for ski-shod Infantrymen travelling through rugged, snowbound areas. Since gun crews carry their automatic weapons and ammunition boxes on their backs (in addition to lugging their rucksacks), it is understandably difficult for them to maneuver; additionally, it often takes precious minutes in a combat situation to set up the machinegun and get it operating. Another disadvantage lies in the weapon's slender steel legs. As the machinegun fires, vibration works the tripod into the snow and sometimes buries the barrel beneath the surface. In such a situation, of course, the target is rather hard to hit.

But the Ahkio-Machinegun has

remedied these problems—and here's how it was done:

A surplus Ahkio sled was salvaged by a group of enterprising Infantrymen and was then cut in half. Aluminum rods were bolted to the fiberglass sled bottom to form the actual machine-gun mount. Another lightweight metal rod was bolted across the rear of the half-sled to form a traversing bar to control lateral movement of the automatic weapon. Four holes were then drilled into the bottom of the half-sled. Two holes were drilled in front and two were drilled in the rear; metal pegs or ski-pole tips were then inserted before firing. This gave the already stable platform even greater stability and kept the sled from sliding when the weapon was fired.

Aside from the ease of design, the Ahkio-Machinegun has many other advantages. It is light to pull, easy to maneuver and provides a steady firing platform. In addition, the gun crew can also haul their rucksacks and other equipment with their weapons. Due to its small size and light weight, this versatile winter weapon can be effectively used by helicopter-borne Infantrymen or by gun crews taken into action by M59 armored personnel carriers or other overland vehicles. The mount can be quickly pulled from the door of a helicopter or armored personnel carrier and can be put into action in seconds. With the old method—and without this innovation—this same action often took minutes before the gun was ready to fire.

The history of the Ahkio-Machine-gun dates back to 1956, when the 23d Infantry arrived in Alaska as a part of the 2d Infantry Division's Operation Gyroscope. During that first winter, troops of the 23d Infantry using automatic weapons suffered a setback in deep-snow combat actions—they couldn't keep their machine-guns above the snow.

The unit tried skis, but the assembly couldn't be maneuvered through underbrush. An attempt was then made to tie a machinegun to a full-sized Ahkio, but the gun either fell off or tipped the sled. Everything tried seemed to fail; the mounts were either too cumbersome or otherwise impractical.

Clearly shown are the aluminum mounting rods, the traversing bar and an ammunition-can rack added as a refinement.

Then the beat-up cargo sled and Yankee ingenuity came into play. Captain James L. Anderson, then commander of Company A, 1st Battle Group, 23d Infantry, came up with the basic design for the Ahkio-Machinegun. With the added ideas of First Sergeant Joseph J. Bettin and Sergeant First Class Richard P. Eply, and the engineering skill of Specialists Seigfried Bartch and Dieter N. Hollain (all of Company A), the Ahkio-Machinegun became a reality.

The new machinegun mount, three years in the making, was tested at Fort Richardson in October, 1959, and was a success. It has been put through a careful study by U. S. Army, Alaska, Combat Developments specialists, and is currently undergoing further study by Army research experts.

All in all, users of the Ahkio-Machinegun are quite enthusiastic about its possibilities. It is certainly a positive indication of how a little Yankee ingenuity can go a long way—even in the deep snow.

SP5 WILLIAM W. CHURCH enlisted in the Army in 1955 after serving in the United States Navy during the Korean War. He is a graduate of the Army Information School and has written several articles which have appeared in the *Quartermaster Review* and the *Alaskan Sportsman*. Specialist Church is now press branch supervisor with the Information Office, U.S. Army, Alaska.

PFC WILLIAM H. NEY, a graduate of Kansas State College of Pittsburg, Kansas, enlisted in the Army in 1958 and attended the Army Information School at Fort Slocum, New York. He is currently senior information specialist, Information Office, U.S. Army, Alaska.

The opinions expressed in this article are those of the authors and do not necessarily reflect official thinking of the Infantry School.

PRO-PAY. . .

EVERYBODY'S BUSINESS

✔ What it is—and why.
✔ How to prepare for the test.
✔ Commander's responsibilities.

by Capt Robert A. Sullivan

THE new Enlisted Evaluation System has had (and will continue to have) a wide impact on the Army. It affects the enlisted men to which it applies and certainly affects the supervisors—officer and enlisted—who have important responsibilities relating to it. And since it cost in the neighborhood of $12,500,000 for the first year of operation, we can readily see that pro-pay *is* everybody's business.

Since the Enlisted Evaluation System touches on two things dear to all Infantrymen (their careers and their pocketbooks), let us explore this subject in greater detail to find out what it is and how it operates. Let us also explore what commanders and individual soldiers can do in preparation for the proficiency tests.

To do this, we must first understand that proficiency pay is awarded to EM possessing *special* proficiency in a military skill. It is not intended to act as a substitute for promotion. The main objective is, of course, to develop an enlisted career Army of competent and experienced men.

As one of the first steps in establishing the new evaluation system, certain eligibility requirements were set forth by Department of the Army for those who were to be tested for awarding of pro-pay (Figure 1). Each soldier meeting these requirements *must* take the proficiency test developed for his 4-digit MOS. He can refuse the awarding of proficiency pay, but each eligible soldier is required to take the test even if he is working out of his primary MOS.

Testing of individuals began in January, 1959. Since that date, 115,912 EM have been tested in 277 MOSs. A total of 56,321 were awarded proficiency pay as a result of this testing. By the middle of 1963, the program is planned to be fully implemented. It is anticipated that, by that time, over 1300 4-digit MOS tests will have been developed for annual administration to over 380,000 enlisted personnel.

Eligibility Requirements: In order to qualify for the awarding of pro-pay, enlisted men must:

Be enlisted in the Regular Army.

Be in an appointable status under promotion regulations (AR 624-200) i.e., not AWOL, in confinement, etc.

Serve in pay grade E4 or higher.

Be classified in a primary MOS (including skill level digit) for which a test has been developed.

Occupy a pay grade no higher than that which is authorized for his MOS, including skill level digit.

Have a minimum of six months active duty immediately prior to the testing period.

Be eligible for reenlistment.

Figure 1. Eligibility requirements.

Infantrymen need not wait this long to be tested, however. Current plans include testing all personnel with Infantry MOSs by the end of 1960.

Personnel with 111, 112, or 311 MOSs were initially tested in 1959. The retest for these personnel is scheduled for this year under the following tentative schedule:

111.1, .6 and .7, August 1960

112.1, .2, .3, .6 and .7, May 1960

311.1, .2, .6, .7 and .8, December 1960

Scheduled for initial testing in May of this year are the following:

113.1, .3, .6, .7, .8 and .9, (Infantry Operations and Intelligence Specialist)

115.8 and .9, (Infantry Senior Sergeant)

The determination as to how many personnel within each of the Infantry MOSs will receive proficiency pay is made by Department of the Army. This determination is based on the criticality of the MOS expressed in percent of authorized strength. Criticality is determined by the length and cost of training time required to produce a qualified soldier in a particular MOS. The current reenlistment or retention rate of personnel in the MOS is also considered. Hence, an MOS in the nuclear or scientific field, in demand by civilian agencies, would be more critical on the basis of retainability than the MOS of a clerk typist.

Before continuing our discussion, it is perhaps wise that we get on solid ground as far as the meaning of certain terms is concerned. The definition of terms peculiar to the Enlisted Evaluation System in Figure 2 will provide the background knowledge which will assist in the discussion to follow.

HOW IT WORKS

When the announcement of a testing date is made by Department of the Army, the unit personnel officer screens all enlisted personnel records and determines the eligible personnel within the command. He then initiates a Commander's Evaluation Report (CER) for each eligible soldier and forwards it to the unit commanders concerned for completion. (The purpose of the CER is to permit a factual evaluation of an individual's on-the-job performance by his immediate superiors and unit commander.) The completed CER for each soldier being tested is then submitted to the test control officer responsible for the testing. After completion of the test, the answer sheets and the CERs for all personnel are forwarded to the Enlisted Evaluation Center for grading. If a soldier receives PCS orders prior to a testing date, the unit commander should ensure that a report is rendered and forwarded to the unit personnel officer to be placed in the individual's 201 file for later use (if appropriate) while in a transient status. At this point it should be noted that the CER reports are transmitted and handled in the same manner as officer efficiency reports.

THE RATINGS

To successfully attain the objective of the evaluation report, it is important that all evaluations start from the same frame of reference. This is particularly important since the CER represents a substantial portion of the overall proficiency score.

Figure 2. Pro-pay terminology.

Proficiency Rating. A classification which denotes a specific monthly rate of proficiency pay as follows:

P-1	$30.00
P-2	$60.00
P-3	To be announced

Commander's Evaluation Report (DA Form 2166). A form for evaluating the individual soldier's job performance and leadership or technical abilities.

MOS Proficiency Test. A pencil and paper test designed to measure individual knowledge in a specific four-digit MOS.

MOS Proficiency Test Aid. A Department of the Army pamphlet containing a summary of the test subject and a list of regulations, manuals and other references to be utilized by enlisted personnel in preparation for the tests.

Proficiency Data Card. An individual data card prepared by the United States Army Enlisted Evaluation Center containing the MOS test score and the proficiency score.

Proficiency Score. A composite score composed of scores achieved on the appropriate MOS Proficiency Test and The Commander's Evaluation Report. This score is expressed as an Army Standard Score.

Test Announcement Circular. A Department of the Army circular announcing the proficiency tests which will be administered during a specific period, eligibility criteria and other administrative details concerning the testing program.

Test Control Officer. A commissioned or warrant officer appointed by the installation commander to supervise operation of the installation MOS Proficiency Testing Program.

MOS Project Director. An officer assigned by the appropriate service school commandant to monitor all activities involved in the preparation of test aids and test questions developed by the appropriate school.

The comparison base used in the CER is the duty performance of the soldier being rated as compared to the duty performance of all other enlisted personnel in the same grade and MOS that the rater or indorser has known.

RESPONSIBILITIES OF THE COMMANDER

The commander should instruct all personnel who are going to be either CER raters or indorsers as to the proper procedures to follow in completing the report. The tendency to arbitrarily rate a soldier at or near the same level on all characteristics should be avoided since it makes it difficult to obtain a valid rating. In addition, each rating should be a separate, individual judgement. There should be no attempt to correlate the rating of the indorser and the rater.

After-action reports from the Enlisted Evaluation Center indicate that during the first year of testing over 600 discrepancies were detected in the preparation of evaluation reports. Although this is a relatively small statistical percentage of the total personnel evaluated, it means that over 600 men were denied proficiency ratings or unnecessarily delayed from receiving the rating through no fault of their own. For this reason, commanders must ensure that emphasis is given to the proper completion of the CER.

There are other responsibilities that commanders have in connection with the program. The most important of these is to completely understand the system so that they can effectively support it. The number of personnel within a unit who qualify for a proficiency rating may well reflect the amount and type of support given to the program by the unit commander. Certainly the evaluation system is not intended to be used as a tool for competition between units. Nevertheless, it is sometimes used by higher headquarters to evaluate training results and relative proficiency among units.

Preparation for the proficiency test is an individual responsibility, but the unit commander can provide considerable guidance and support. Enlisted personnel involved in the testing program will have many questions concerning it. And they will naturally look to their commander and the officers in their unit for the answers. This is one positive means of assistance.

As an additional step, commanders should take the necessary action to see that each individual assigned to their unit is classified in an appropriate MOS and skill level. Individuals possessing a grade which is higher than that appropriate to assigned skill levels should be trained to perform at the skill level which is appropriate to their pay grade. When CERs are received from the unit personnel officer, the primary MOS shown must reflect the soldier's actual primary MOS. DA Circular 611-41 has recently directed that pay grades and skill levels be aligned in the higher pay grades, and commanders should ensure that personnel have been properly reclassified, if appropriate, under the provisions of this circular. DA Pamphlet 611-5, *A Unit Commander's Guide to the Enlisted Classification System,* is an excellent guide to use in accomplishing this.

The unit commander should also provide necessary reference material for all MOSs authorized within his unit to facilitate study by unit personnel. In addition, he should arrange for a quiet area for those who wish to study. This will not only aid the men of his unit in test preparation, but will also increase the overall proficiency of the unit. If the commander has personnel who must have access to classified material in their study, he should take the necessary steps to obtain it. Additionally, he should post applicable job descriptions from AR 611-201 on the unit bulletin board.

Other ways in which the unit commander can assist personnel of his unit in preparing for the test appear in normal day-to-day activities. In training, for example, problems designed to increase the soldier's knowledge in a particular MOS can be scheduled. Rotation of personnel throughout the jobs authorized within an MOS will also aid in broadening the enlisted man's knowledge.

A test aid pertaining to the specific MOS in which a man is classified should be obtained for him. These are normally procured from the unit personnel officer but, if unavailable through him, may be obtained from the local test control officer.

When the scheduled date for testing arrives, commanders must en-

"Ping-pong, pool and Presley" are not conducive to quiet study.

sure that every eligible individual has an opportunity to be tested. In spite of all actions which a unit commander may take, however, there may be a few individuals who will miss the first testing session for reasons beyond their control. Such reasons as emergency leave, illness, operational readiness requirements, etc., may cause this. In these cases, it is necessary for the commander to make certain that individuals who missed the initial testing period are tested in the make-up session.

RESPONSIBILITIES OF THE INDIVIDUAL

As has been shown, commanders have a number of responsibilities toward making the evaluation system function properly. However, it is up to the individual being tested to prepare himself for the test and to do all that he can to ensure that he meets the qualification criteria. In this regard, Infantrymen who have been filling a position out of their primary MOS for any length of time will necessarily require additional preparation for the test to properly compete with personnel having daily experience on the job.

Along these lines, personnel who have been recently reclassified should refer to the Standards of Grade Authorization contained in AR 611-201 to determine their exact status as far as grade, skill level and job requirements are concerned. As a result of DA Circular 611-41, which became effective 1 January 1960, reclassification has been accomplished in many areas to ensure that skill levels are commensurate with pay grades in the higher grades. As an example, prior to 1 January, an NCO in pay grade E6 may have been filling a 113.7 position in an operations section. On 1 January 1960 (in accordance with Circular 611-41), it is very likely that he was reclassified to MOS 113.6 which is in line with his pay grade. If 113.6 is now his primary MOS, he will then be required to take the proficiency test developed for that skill level.

Enlisted men who are to be awarded a new primary MOS should ensure that it is accomplished prior to the first day of the scheduled testing period for their new MOS. For instance, if a man's MOS is to be changed from 112.7 to 115.8 because he is filling a first sergeant's position, he must be reclassified prior to 1 May 1960 (the testing date) in order for him to be eligible for the 115.8 test. However, if the change is not made in time, he is eligible to take the test for 112.7, even if he is filling a first sergeant's slot. It should be remembered, of course, that classification is accomplished at the unit personnel level based on recommendations of the unit commander.

Organized study groups will aid in preparation for the tests.

In addition to ensuring that he is properly qualified, the Infantry enlisted man should take advantage of all of the facilities and aids provided for him to prepare for the test; sixty to ninety days prior to the actual test date, appropriate test aids for the MOSs being tested are distributed to personnel officers. Further distribution is then made to the men who will take the test. Each test aid contains five sections: Section I is a brief discussion of the MOS testing program; Section II contains a description of the test administration and, if applicable, covers additional material authorized for students' use during the test; Section III outlines the broad subject areas covered by the test; Section IV is a guide for proper preparation; Section V provides a list of study references from which the questions were written and covers the appropriate skill level to which they apply.

Aside from the individual use of test aids, there are several other means to assist EM in preparing for the test. One of these is the organization (by MOS) of study groups which are led by someone who is already drawing pro-pay in that specialty. In addition, a well organized plan of personal study and good study habits will greatly assist an individual in preparation for the test.

Several Army agencies can also help the soldier who is preparing to undergo the test. The United States Armed Forces Institute (USAFI) provides many extension courses which closely parallel the occupational areas covered by the tests. Soldiers interested in obtaining USAFI enrollment information are encouraged to contact their local information officer.

Every aspect of the MOS skill is tested.

A good source of current information for Infantry personnel is the U.S. Army Infantry School (USAIS) Book Department at Fort Benning; advance sheets, school problems, booklets and other material used in resident instruction at USAIS are available here at a nominal cost. A catalog of available reference material will be sent to those desiring it upon request. In many cases, data on new developments is available to personnel in the field through this media before the information appears in DA publications.

As the soldier progresses in his preparation for the test, he may become unduly apprehensive. There really should be no undue concern over the test since no attempt has been made to surround it with an air of mystery or magic. If a soldier is thoroughly familiar with the duties of his daily job (and those falling within the purview of his MOS and skill level), with a bit of "boning-up" he will have little difficulty with the test.

HOW THE TEST IS COMPILED

The test itself is of the paper and pencil variety and contains multiple-choice questions which are designed to measure the individual soldier's technical job knowledge (Figure 3). The tests for the specialist grades contain 100 questions, and those developed for the NCO grades include 125 questions. The additional questions in the NCO tests deal with leadership and supervisory principles. A maximum allowable completion time of three hours is placed on all tests. Test control officers reported last year that this three-hour period proved to be more than sufficient time to complete the test.

It is important to emphasize that the questions pertaining to a particular 4-digit MOS are representative of *all job duties* authorized within the appropriate MOS. For example, a test developed for MOS 111.1 (Light Weapons Infantryman) would be representative of all job duties shown for this MOS in AR 611-201. These would include (for pay grade E4) ammunition agent, ammunition specialist, rifleman, scout, liaison agent, automatic rifleman, observer and gunner.

All questions are based on current tactical doctrine, organization, weapons, equipment and personnel procedures applicable to a particular MOS. Tests which have been developed for administration this year require a familiarization with such items as the D-series TOE, SS10 antitank guided missile, mobile defense, combat support company and other current developments.

The United States Army Infantry School develops questions used in all Infantry MOS tests. The questions are subsequently put together in test booklet format at the Enlisted Evaluation Center where operational control is maintained over them.

TEST ADMINISTRATION

The administration of MOS proficiency tests is uniform throughout the Army. The responsibility for their administration rests with the test control officers appointed by installation commanders. All test administrators are commissioned or warrant officers and

Figure 3. Sample MOS proficiency test questions.

(Select the best answer to each question)

1. A patrol leader can best insure the operational proficiency of his patrol by
   - A. selecting only qualified members.
   - B. issuing a thorough and detailed patrol order.
   - C. thoroughly rehearsing all planned actions.
   - D. insuring that he has adequate fire support.

2. What is the mission of the forward rifle squad in defense?
   - A. To counterattack if the enemy penetrates the platoon area.
   - B. With the support of other arms, to stop the enemy by fire, forward of the battle area, and repel him by fire and close combat if he reaches it.
   - C. To hold the squad area at all costs.
   - D. To engage the enemy in hand-to-hand combat as soon as possible.

3. The ability of the 3.5-inch HEAT rocket to penetrate armor is gained by the
   - A. velocity of the rocket.
   - B. short range to the target.
   - C. shaped charge in the warhead.
   - D. action of the slug formed by the copper cone.

4. The number of mines in a Standard Pattern Minefield cluster should not exceed
   - A. two
   - B. four
   - C. five
   - D. seven

5. The sketch in the figure below is the topographic symbol for a
   - A. school
   - B. cemetery
   - C. church
   - D. hospital

have a background in test administration and enlisted personnel management. They are assisted by test proctors in pay grade E7 or above who have similar experience. Procedures for administering the tests should bring out the best performance of which an individual is capable. Classrooms should be clean, quiet, well-lighted and ventilated. One make-up session is conducted for those personnel who have been absent from the first testing session through no fault of their own.

AFTER THE TEST

Once the test has been successfully completed and an individual receives a proficiency rating, he must be assigned to a duty in his primary MOS. In addition, he must perform in a skill level equal to those authorized in the Standards of Grade Authorization as set forth in AR 611-201. Individuals who have not been awarded a proficiency rating will be assigned to other duties, when necessary, in order that personnel with proficiency ratings may be properly assigned. When, for any reason, individuals awarded proficiency ratings cannot be appropriately assigned, they will immediately be reported to higher headquarters as surplus. If they are not reassigned within 90 days, the proficiency rating will be withdrawn. Individuals receiving proficiency pay will not be placed on temporary or special duty for a period in excess of 90 days unless such duty is related to their proficiency pay MOS. One exception to this is when directed retraining in another MOS is prescribed by Department of the Army and travel is involved. Retention of proficiency ratings is contingent upon the maintenance of proficiency or outstanding efficiency.

If an enlisted man is currently drawing proficiency pay, he does not automatically continue drawing it after the first retest, even if he attains his old score. It is entirely possible for a soldier to make a higher score on the retest and still not qualify for a proficiency rating. The increased competition will require an individual currently qualified to maintain and improve his proficiency if he is to requalify.

Enlisted personnel appointed to the next higher grade will retain proficiency ratings awarded in the lower grade pending qualification for the rating in the new higher grade. Unit commanders will recommend withdrawal of a proficiency rating if the individual is not retested in his new MOS within 12 months after promotion. This same procedure applies to individuals who are reclassified to a higher skill level.

Proficiency ratings will be withdrawn by the appropriate appointing authority when an individual voluntarily waives his proficiency rating for the purpose of reclassification to another MOS. This may also be done if the individual is reassigned for compassionate reasons to a position where his primary MOS is not authorized.

When punitive action under the Uniform Code of Military Justice results in confinement or reduction to a pay grade below E4, the unit commander will initiate withdrawal action for the proficiency rating. Voluntary attendance at a service school which changes his primary MOS will also result in the withdrawal of the EM's proficiency rating.

Personnel receiving pro-pay who reenlist within 24 hours for their own vacancy will be awarded the same proficiency rating upon reenlistment. Those who reenlist for other than their own vacancy are in another category; they must do so under an authorized DA enlistment option for Army service school training which will improve their qualification in the primary MOS for which a proficiency rating was awarded.

In the final analysis, the two most important links in the chain in awarding of pro-pay are the unit commander and the prospective recipient. The unit commander's role is important in that he furnishes guidance, support and study facilities to his men in preparation for the test. And in rendering the Commander's Evaluation Report, he actually determines whether a man is awarded a proficiency rating. The score resulting from the evaluation report and the MOS Proficiency Test is a composite of both of these components.

The other link in the chain, the individual soldier, is the most important of all. For it is he who, by job performance and test score, indicates that he possesses the requisite qualifications for receiving the monetary reward.

For those enlisted Infantrymen with great initiative and professional zeal, the field of pro-pay promises to become quite lucrative. Department of the Army has recently announced that P2 pay ($60) will be awarded to qualified personnel beginning in July. It is further envisioned that P3 payments will be awarded in the future. And it is conceivable that those soldiers who are topnotch in their field will eventually be able to draw up to $100 monthly in proficiency pay.

All in all, proficiency pay should go a long way toward its stated objective: developing an enlisted career Army of competent and experienced men. And with the concerted effort of everyone in the Army, this objective will undoubtedly be reached.

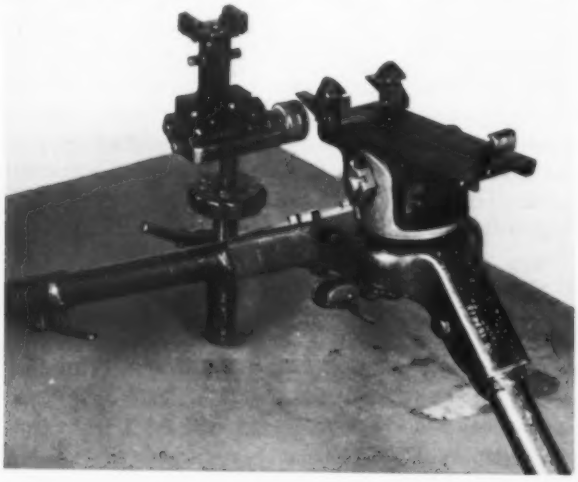
CAPT ROBERT A. SULLIVAN received his RA commission upon graduating from the University of South Dakota in 1952. He completed the Basic Infantry Officer Course that same year and was subsequently assigned to the 52d Armored Engineer Battalion at Fort Leonard Wood. Captain Sullivan served as a company commander and staff officer with the 5th Cavalry Regiment, 1st Cavalry Division, in Korea and Japan from 1953 through 1955. Upon his return from the Far East, he was assistant PMST at Eastern Michigan College, Ypsilanti, Michigan. Among the service schools he has attended are the Advanced Infantry, Airborne, CBR and Mountaineering Courses. At the present time he is chief, Army Training Program Branch, Doctrine Publications Office at the Infantry School.

WHAT'S NEW FOR INFANTRYMEN

Changes • New Developments • Items of Specific or General Interest to Infantrymen

MODIFIED TRIPOD MOUNT

As a result of recent tests, the tripod mount M2, modified by an adapter kit, has been recommended by the Infantry School as the standard mount for the M60 machinegun. It will provide a means for employing the



M60 in a predetermined fire role and ensures the availability of a suitable tripod mount.

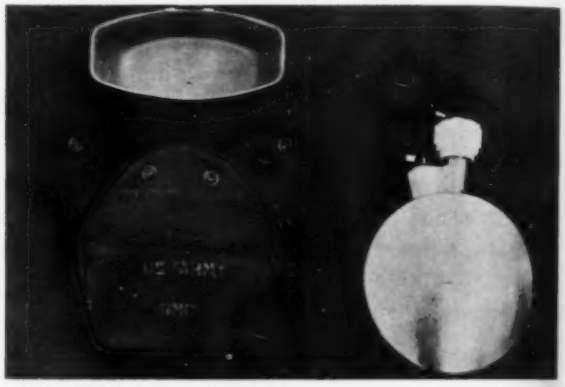
AMMUNITION PACKAGING

Work is continuing in development of a lighter, waterproof cloth or plastic container for packaging ammunition for the M60 machinegun. As presently planned, this container will hold three T4 bandoleers which may either be fired separately or linked together to form a continuous 300-round belt. It is proposed that two of these 300-round containers be packaged in a standard small arms metal container.

SALT WATER DISTILLATION UNIT

An all-aluminum sea water distillation unit (the first known application of aluminum for this purpose) is being developed by Army Engineers at Fort Belvoir. Upon completion, it will replace current desalting equipment made of cupro-nickel. The new equipment will be lighter, have greater capacity and provide better fuel economy. It will also eliminate the requirement for large amounts of nickel which may not be available in event of mobilization.

Final design of the equipment is expected to result in a trailer-mounted unit, suitable for delivery by helicopter. The unit will be capable of producing 125 gallons per hour of potable water from sea water.



COLD WEATHER CANTEEN

Development of a cold weather canteen by the Army Quartermaster has solved a long standing problem of keeping liquids from freezing in extremely low temperatures. A double shell construction, with a vacuum insulation between the shells, keeps liquids from freezing in temperatures down to 40 degrees below freezing for a six-hour period.

M45 MORTAR BORESIGHT

A boresight that eliminates the necessity for use of a gunner's quadrant, reduces the time required for calibration and provides for greater accuracy has been recently developed for use with 81mm and 4.2-inch mortars. It consists of a solid base, cross-level and elevation dials, an M62 telescope and straps for attaching the device to the mortar barrel. This device will overcome the disadvantages inherent in the present system of calibrating.

NIGHT OBSERVATION AND SIGHTING EQUIPMENT

Pictured above is the standard 18-inch searchlight adapted for infrared night illumination. The standing soldier focuses the pocket image metascope used to observe objects in the searchlight beam. Below, the metascope is used again in darkness to study details of a tactical map illuminated by an infrared flashlight.

SPECIAL INSTRUMENTATION VAN

A mobile instrumentation van for use in remote locations has been developed. The van will be used to record the nature and effects of blast and explosive phenomena.

Three groups of equipment are contained in the van. The first measures shock waves, phenomena occurring close to the point of explosions and effects characteristic of small explosions. The second group records general blast data and underground explosive effects. The third group consists of magnetic tape recording devices designed to provide an electrically reproducible version of the data obtained.

NIKE ZEUS

The third generation of the Nike surface-to-air missile family, the Nike Zeus, is currently being test fired at White Sands, New Mexico. Designed as an anti-intercontinental ballistic missile, Zeus is intended to intercept enemy ICBMs before they can reach their targets.

ONE-MAN CHAIN SAW

A one-man, gasoline-driven chain saw has been tested for use in Infantry units. Weighing 27 pounds, it will replace the present 103-pound, two-man saw. Three of the new saws will be issued to the battle group engineer platoon.

MONTHLY LIST OF INSTRUCTIONAL MATERIAL

The Monthly List, an official publication of the Infantry School, is produced to facilitate the coordination of Infantry doctrine among Army service schools and to offer Infantry School instructional materials to Army agencies which conduct, support or monitor School-type instruction. *The Monthly List* is distributed under the provisions of USCONARC Memorandum Number 48, dated 14 October 1958, and each authorized addressee is furnished one gratuitous copy of any item listed which he specifically requests for official use.

Infantry reproduces items listed in current issues of the *List* as a reader service. Items which are preceded by an asterisk may be purchased from the Book Department, USAIS, Fort Benning, Ga., at the prices indicated, by anyone who is a member of the United States Armed Forces and who so states when ordering. The official military unit or agency address should be included with all such orders since such mail cannot be sent to a private residence. If a personal address is given, the cost of postage must be inclosed with the order.

Items not marked with an asterisk are produced in limited quantities for resident instruction at the Infantry School and are not available for purchase. However, a unit or agency having a strong official need for any of these items may request a gratuitous copy from the Doctrine Publications Office, USAIS, Fort Benning, Ga. Such requests must state the purpose for which the material is needed and must include the official title and unit or agency address of the requester. Properly justified requests will be filled so long as the supply lasts.

***Command and Staff Responsibilities—Nuclear Weapons Employment,** 2406-USAR (RDT). Integrated conference and map exercise covering the basic concepts and doctrine in tactical nuclear weapons employment to familiarize the student with command responsibilities and nuclear weapons considerations in command and staff planning. $.75

***Nuclear Weapons and Delivery Systems,** 2409-USAR (RDT). Conference on nuclear weapons to include basic physics of nuclear detonation, types of weapons to include principles of operation, characteristics of nuclear weapons delivery systems and effects data in DA Pamphlet 39-1. This material is applicable to nuclear warfare. $.60

***Introduction to Nuclear Weapons Effects,** 2410-S-USAR (RDT). Integrated conference and demonstration covering the types of bursts and physical effects of nuclear explosions. $.30

***Use of Unclassified Effects Data and the Weapons Selector System of Target Analysis,** 2436-USAR (RDT). Conference and practical exercise on the data contained in DA Pamphlet 39-1 and its use; basis and use of the weapons selector, to include troop safety. $.35

Tactical Employment of Army Aviation, 6105-A2. Integrated conference and practical exercise covering the organization, missions and tactical employment of the Infantry division aviation company with emphasis on aviation company elements supporting battle group operations in a nuclear war.

Introduction to Combat Intelligence, 6205-A2. Integrated conference and practical exercise covering the duties and functions of the battle group S2, organization of the Infantry division and battle group intelligence sections, the intelligence estimate, the use of intelligence, the intelligence cycle and the production of combat intelligence.

TRAINING FILMS

The following training films have been approved for release to requesting units:

SFS 5-159, Theory of Electricity, Part I, Magnets, 15 minutes.

SFS 38-57, Packaging and Packing, Cushioning, Blocking and Bracing, Part I, 10 minutes.

TF 6-2798, The LaCrosse Battalion, Introduction to LaCrosse System, Part II, Description of Equipment (U), 30 minutes.

TF 7-2824, Rifle Company as an Advance Guard, 31 minutes.

TF 8-2582, Clinical Shock, 28 minutes.

TF 9-2807, Power and Oil Flow in the CD 850, Part I, 20 minutes.

TF 9-2808, Power and Oil Flow in the CD 850, Part II, 14 minutes.

TF 9-2810, Conduct of Ordnance Spot Check Inspection, 24 minutes.

TF 9-2814, The Simmonds SU Fuel Injector, Principles of Operation, 30 minutes.

TF 9-2831, Destruction of Ammunition by Burning, 26 minutes.

TF 17-2826, The Armor Soldier on the Nuclear Battlefield, 30 minutes.

TF 20-2801, Land Mine Warfare, Part III, Laying the Minefield, 21 minutes.

TRAINING LITERATURE

The following training literature has recently been printed by Department of the Army and is available to instructors through normal supply channels:

FM 23-8, U. S. Rifle, 7.62mm, M14 (new).

FM 23-30, Grenades and Pyrotechnics (revision).

TC 23-2, SS10 Guided Missile (Infantry and Armor Units) (new).

ATP 7-32, Headquarters and Headquarters Company, Airborne Division Battle Group (revision).

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Space Has Been Left For Additional Information

MAP SYMBOLS

Lines

Bomb Line (non-nuclear) . . . . . BL

Nuclear Bomb Line . . . . . NBL

No-Fire Line . . . . . NFL

Nuclear No-Fire Line . . . . . NNFL

Nuclear Safety Line . . . . . NSL

Trace of Forward Dispositions (Blue: Friendly/Red: Enemy)

Trace of Forward Enemy Dispositions (When using one color)

Line of Patrols (Blue: Friendly/Red: Enemy)

Enemy Line of Patrols (When using one color)

(NOTE: Dots for line of patrols do not indicate the actual size or specific location of patrols. Dots on the reconnaissance and security position (RSP) indicate as nearly as possible the exact location of positions to be covered but not the size of the reconnaissance and security force.)

Phase Line . . . . . PL ALFA

Forward Edge of the Battle Area . . . . . FEBA

Combat Outpost Line . . . . . COPL

General Outpost Line . . . . . GOPL

Reconnaissance and Security Position . . . . . RSP

Light Line LL

Straggler Line . . . . . S

Area or Positions

Assembly Area . . . . . or Reserve Location (Offense) . . . . .

Attack Position . . . . . ATTACK

Proposed or future company assembly area of Co A, 1st BG, 87th Inf . . . . . or Proposed or future company reserve location of Co A, 1st BG, 87th Inf . . . . .

Occupied Company Blocking Position . . . . .

Unoccupied Company Blocking Position . . . . .

Command Installations

Present Location (1st BG, 87th Inf) 1 87

OPERATION ORDER

CLASSIFICATION

(Changes from oral orders)

Copy No _____
Issuing Headquarters
Location of CP
Date/Time Group
Message Reference Number

Operation Order _____
(Serial Number)

References: (Maps, aerial photos, etc.)

Time zone used throughout the order: Listed when execution will take place in a different time zone from place of issue.

Task Organization: List here, when task organization is too cumbersome to be listed in the body of the order, the task subdivisions or tactical components which will complete the entire command, together with the name and rank of the commanders.

1. Situation

Such information of the general over-all situation as may be essential for subordinates to understand the current situation.

a. Enemy forces: Composition, disposition, location, movements, identification, capabilities, and indications.

b. Friendly forces: Pertinent information of friendly forces, other than those organic or attached, which may have a bearing on the decision of a subordinate.

c. Attachments and detachments: List those units attached to or detached from the issuing unit for this operation to include the effective time.

2. Mission

A clear concise statement of the task which is to be accomplished by the issuing unit and its purpose.

3. Execution

The first subparagraph will be entitled "Concept of operation:" and will give a brief summary of the commander's tactical plan to accomplish his mission.

In separate lettered subparagraphs give the specific tasks of each element of the command charged with the execution of tactical duties.

In the next to last subparagraph give instructions to the reserve unit(s).

The last subparagraph will be entitled "Coordinating Instructions:" and will contain the details of coordination and control measures applicable to the command as a whole and instructions applicable to two or more units of the command. If the order is not effective upon receipt, the effective time will be indicated in this subparagraph.

4. Administration and Logistics

Specific instructions concerning administration and logistics for the conduct of the operation.

5. Command and Signal

a. Signal: Cite the number of the index of Signal Operation Instructions (SOI) in effect. Special instructions relating to the use of signal communications.

b. Command: Location of command posts, location of commanders. Time of opening command posts, if announced.

Acknowledgement Instructions

Commander's last name and rank

Annexes:

Distribution:

Authentication

CLASSIFICATION

CONVERSION FACTORS

Multiply	by	to obtain
centimeters	.03281	feet
centimeters	.3937	inches
cubic feet	.02832	cubic meters
cubic meters	35.31	cubic feet
degrees	60	minutes (circular)
feet	30.48	centimeters
feet	.3048	meters
feet per minute	.01136	miles per hour
feet per second	.6818	miles per hour
gallons (British)	1.201	gallons (US)
gallons (US)	.8327	gallons (British)
inches	2.540	centimeters
inches	.08333	feet
inches	1000	mils
kilometers	.6214	miles
meters	100	centimeters
meters	3.281	feet
meters	39.37	inches
meters	1.094	yards
miles	5280	feet
miles	1.609	kilometers
(B) mils	.001	inches
square meters	10.76	square feet
square meters	1.196	square yards
square miles	2.590	square kilometers
square yards	.8361	square meters
temp (°C) + 17.8	1.8	temp (°F)
temp (°F) — 32	.5556	temp (°C)
yards	.9144	meters

THE

INFANTRY

LEADER'S

HANDBOOK

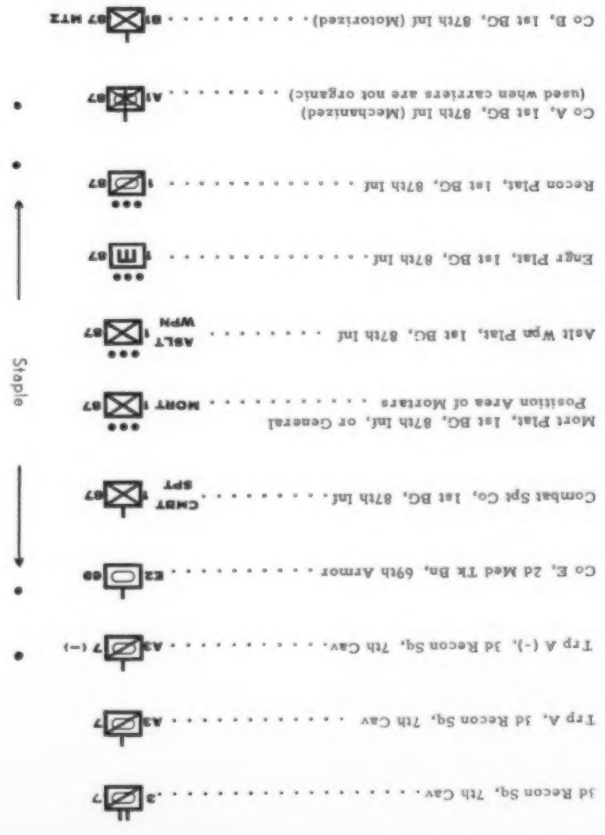
Effective Ranges		Approx Bursting Area	Remarks
Armor Defeating	Other Targets		
H-185-Moving *(1,8) H-275-Stationary *(1, 2, 8)	275*(1, 2, 7)	18 x 9 (Heat)	1. Recommended by USAIS based on skill of average gunner. 2. Maximum effective range for firing in prone position. 3. Maximum effective range of weapons system. 4. Maximum sight graduations primary direct fire sight. 5. Armor defeating capabilities are limited by capability of ammunition, nature of target, observation, and visibility. 6. Approximate weights to the nearest 25 pounds. 7. Against area targets 825 meters. 8. Effective armor defeating ranges against L-Light, M-Medium, H-Heavy tanks. 9. Same capabilities as the 90mm FT, SP, Gun, M56. 10. Depending on flight time to target. 11. Minimum practical range is 450 meters based on gunnery ability.
H-1100 *(3) H-2000 *(4)	2000 (3, 4) as determined by nature of target	14m radius (HEP-T)	
H-2750-Heat *(5, 8) L-2250-APT *(5, 8) M-1450-APT *(5, 8) H-925-APT *(5, 8) M-2250-HVAP*(5,8) H-1475-HVAP *(5,8)	4600 *(4)	37x6 (HE)	
L-1825-APT *(5, 8) M-1250-APT *(5, 8) H- 925-APT *5, 8) H-1825-HVAP *5,8)	4600 *(4)	30x5 (HE)	
*(9)	4400 *(4)	*(9)	
H-1600 *(8, 11)	450 to 1600		

* See Remarks Column.

(B)

(e) Terrain.
(f) Weather and light data.
(g) Time of departure.
(h) Countersigns.
(i) Communication means.
(j) Planned or on-call fires.
(k) Intermediate objectives.
(l) Rehearsals.
(m) Time of return.

Upon return of the patrol, the patrol leader executes the patrol report.


Co B, 1st BG, 87th Inf (Motorized)
Co A, 1st BG, 87th Inf (Mechanized)
(used when carriers are not organic)
Recon Plat, 1st BG, 87th Inf
Engr Plat, 1st BG, 87th Inf
Asit Wpn Plat, 1st BG, 87th Inf
Mort Plat, 1st BG, 87th Inf, or General
Position Area of Mortars
Combat Spt Co, 1st BG, 87th Inf
Co E, 2d Med Tk Bn, 69th Armor
Trp A (-), 3d Recon Sq, 7th Cav
Trp A, 3d Recon Sq, 7th Cav
3d Recon Sq, 7th Cav
Staple

HEAT STROKE
Symptoms: Hot, dry skin; headache, dizziness, weakness, and rapid breathing and pulse. Severe cases—unconsciousness.
Treatment: Carry patient to shady place. Remove clothing; sprinkle or bathe patient with cold water; fan; massage trunk, arms and legs. Seek aid of medical officer at once.

HEAT CRAMPS
Symptoms: Severe cramps of the muscles of abdomen and legs following overheating.
Treatment: Remove patient to cool place and remove outer clothing; give water and salt as for heat exhaustion. Send patient to hospital if cramps are severe.

FROSTBITE
Freezing of a part of the body can be avoided by wearing warm, loose clothing and by keeping dry.
Symptoms: Skin turns gray or white; numbness.
Treatment: Remove any clothes such as boots, gloves and socks that fit closely to the site of the injury. Rapidly thaw the frozen part by placing it in warm water, or by placing the part next to a warm part of your own or someone else's body, or by exposure to warm air. Do not rub or apply ice or snow.

BROKEN BACK
For a broken back, *do*—
(a) Place a low roll, such as a bath towel or clothing, under the middle of the back to support it and bend it backwards.
(b) Lift the casualty, if he must be moved, onto a litter or board without bending his spine forward. It is best to have at least four men for this job.
(c) If the casualty is in a face-down position, he may be carried face down in a blanket.
(d) Keep the casualty's body alinement straight and natural at all times and keep the air passages free. If he is conscious, caution him not to move!
For a broken back, *do not*—
(a) Move the casualty unless absolutely necessary.
(b) Raise his head even for a drink of water.
(c) Twist his neck or back.
(d) Carry him in a blanket face up.

BROKEN NECK
A broken neck is extremely dangerous. Bone fragments may cut the spinal cord just as in the case of a broken back. Keep the casualty's head straight and still with the neck slightly arched. If he is conscious, caution him not to move! Moving him may cause his death! This is the way to protect a broken neck:
(a) Place a rolled bath towel, or a roll of clothing about the same bulk as a bath towel, under the neck for support and padding. The roll should be thick enough only to arch the neck slightly.
(b) Raise the shoulders in order to place the roll under the neck. Do not bend the neck or head forward. Do not twist or raise the head at all.
(c) Place the roll so that when the casualty is lying flat, the back of his head touches the ground.
(d) To keep the head motionless after the roll is in place, put a large padded rock or pack at each side of the head.
If the man must be moved, get help. One person should support the man's head and keep it straight while others lift him. Transport him on a hard stretcher or board. Never turn over a casualty who has a broken neck!

Characteristics of Army Aircraft. Rotary wing:

Aircraft	Allowable cargo load (lbs)	Troops Combat Equipped	Litter	Provisions For Cargo Transport
H-13 (Sioux)	70 nautical mile radius 400	2	2	none
H-23 (Raven)	45 nautical mile radius 400	2	2	none
H-19 (Chickasaw)	50 nautical mile radius 1,600	6 (prchr 5)	6	cargo compartment & external sling.
H-U1 (Iroquois)	100 nautical mile radius 1,200	5	2	cargo compartment & external sling.
H-21 (Shawnee)	120 nautical mile radius 1,840	12 (prchr 10)	12	cargo compartment & external sling.
H-34 (Choctaw)	40 nautical mile radius 3,000	12	8	cargo compartment & external sling.
H-37 (Mojave)	100 nautical mile radius 2,880	23	24	cargo compartment & external sling.
	90 nautical mile radius 4,000			
	112 nautical mile radius 2,880			
	65 nautical mile radius 6,000			

Weapon	Common Name	Unloaded Weight (Approximate in Pounds)	Type of Feed	Method of Operation	*Cyclic (C) or Maximum Rate (M) of Fire (Rds per Min)
Browning Automatic Rifle Cal .30, M1918A2	AR	19½	20 Rd Magazine	Gas Operated Automatic	350 (C) Slow Rate 550 (C) Fast Rate 120-150 (M)
Machinegun, 7.62mm, M60	M-Sixty	Gun 23	Belt Metallic Link	Gas Operated Automatic	550
Browning Machine-Gun, Cal .30, M1919A6	Light Machinegun	33	Belt Metallic Link	Recoil Automatic	600-675 (C)
Machinegun, Cal .50 HB, M2	Caliber Fifty Machinegun	126	Belt Metallic Link	Recoil Semi-automatic and Automatic	500 (C)
Portable Flame-Thrower, M2A1-7	Flamethrower	40½	Fuel Propelled by Gas Under Pressure	Manual	Continuous Discharge 6-9 Seconds
Portable Flame-Thrower, M8	One Shot Portable Flamethrower	12½	Fuel Propelled by Gas Under Pressure	Manual or Electrical	Continuous Discharge 4 Seconds
81mm Mortar, M29 With Mount, M23A3	Eighty-One Mortar	Barrel ..28 Bipod ..40 Base-plate ..25.5 93.5	Muzzle Loading by Hand	Drop Fire	12 (M) for Two Minutes with Charge Eight
4.2-In Mortar, M30 With Mount, M24A1	Four Point Two Mortar	640	Muzzle Loading by Hand	Drop Fire	15-20 (M) for One Minute, 5 for Next Two Minutes

*Cyclic Rate of Fire (C) . . . . . Rate at which weapon fires automatically.
Maximum rate of Fire (M) . . . Greatest rate at which well-trained gunner can fire
Sustained Rate of Fire . . . . . Rate at which weapon can fire indefinitely without seriously overheating.

Sustained Rate of Fire (Rds Per Min)	*Maximum Effective Rate of Fire (Rds Per Min)	*Maximum Range (Nearest 25) Meters	*Maximum Effective Range Meters	Approximate Effective Bursting Area (In Meters)	Remarks
40-60	40-60 (2 or 3 rd bursts) 120-150 (20 rd bursts)	2750-3200	460		To be replaced by M14 (AR).
100	200	3750	1100		Maximum effective range limited by gunner's ability to see and adjust on target.
75	150	3200	1100		Maximum effective range limited by gunner's ability to see and adjust on target. May be fired from tripod mount. LMG to be replaced by M60
40	100	6800	725 AA Target 1825 Ground Target		
Continuous Discharge 6-9 Seconds	Continuous Discharge 6-9 Seconds	25 Unthickened Fuel 50 Thickened Fuel	25 Unthickened Fuel 50 Thickened Fuel		Contains 4½–4¾ gallons of fuel weighing 25 to 29 pounds.
Continuous Discharge 4 Seconds	Continuous Discharge 4 Seconds	20-25 Unthickened 45-50 Thickened Fuel	25 Unthickened Fuel 50 Thickened Fuel		Contains 2 gallons of fuel weighing 11 to 15 pounds.
3 with Charge Eight	2 with Charge Eight	3675	3675	27x18 (A)	Ammunition weighs 7-12 pounds (A). Maximum rate and sustained rate with charges 1-7 to be determined.
1	1	5500	5500	45x15 (A)	Ammunition weighs 25-28 pounds. (A)

NOTE: (A) Depending upon type of ammunition used.
*Maximum Effective Rate . . . Rate at which trained gunner can fire and obtain reasonable number of hits (50%).
Maximum Range . . . . . Greatest distance weapon will fire.
Maximum Effective Range . Greatest distance at which gunner may be expected to fire accurately.

TANK-ANTITANK-RECOILLESS WEAPONS

	Common Name	Weight	Rate of Fire (Per Minute) Max	Rate of Fire (Per Minute) Sustained	Maximum Range
3.5-In Rocket Launcher	Rocket Launcher	Launcher....13 Rockets..... 9	12—18	4	825
106mm Rifle, M40A1 w/Spotting Rifle Cal .50 M8 (on M38A1C ¼ Ton Truck)	One 0 Six	Rifle .....275(6)* w/Gnd Mtd .460 w/Gnd Mtd .(Abn) .400 M38A1C....3125 M274 ....1420 Ammunition 37	1 per 6 sec not to exceed 5, then 15 min cooling period	1	7680
90mm FT, SP, GUN, M56	M-Fifty-Six	15,500	6	1	17154
76mm Gun Tank M41A1	Walker Bulldog	52,000	7	1	21607
90mm Gun Tank M48A2	M-Forty-Eight	104,000	7	1	*(9)
SS-10 Antitank Guided Missile on ¼ Ton Truck	SS-Ten	Launcher....15 Missile.....33 — 48 (Not separated until launched	2-3 *(10)	2-3 *(10)	1600 *(11)

RECONNAISSANCE PATROL PLANNING

1. The primary mission of a reconnaissance patrol is to gather information.

2. The S2 is responsible for planning, coordinating, briefing and debriefing reconnaissance patrols.

3. Patrol briefings will include, as a minimum, the following items:

(a) Mission of the patrol.
(b) Location of the enemy.
(c) Location of friendly forces.
(d) Location of minefields and obstacles.

FIRST AID

WOUNDS

Treatment: Stop bleeding. Apply pressure to the wound with a first aid dressing.

Arm and Leg Wounds: If unfractured, and additional pressure and elevation fail to stop bleeding, or when blood is spurting from the wound, apply a tourniquet between the wound and the heart. A tourniquet must be tight enough to stop arterial bleeding; it should be loosened or removed only by trained medical personnel.

Chest Wounds: Seal the wound with some airtight material to prevent air from being sucked into the chest cavity causing the lungs to collapse.

Belly Wounds: Cover any protruding gut with a dry sterile dressing applied just tight enough to hold it in place. Do not try to replace any organs. Do not give food or fluids.

Jaw and Face Wounds: Clear the airway by sweeping fingers through the mouth to remove any obstruction to breathing. Bind dressing to protect external wound. Use additional strips of cloth to support broken jaw. Do not cover mouth. Position on belly with face down or to the side.

Head Wounds: Do not give morphine. Elevate the head slightly to decrease pressure. Check mouth for broken teeth or other objects which might cause choking.

SHOCK:

Whenever you see severe injury, treat for shock immediately. Stop the bleeding, protect the wound, position the casualty with his head and shoulders lower than his feet (exception: head or chest injury) and splint fractures. Make casualty comfortable, loosen belt and clothing. Cover to retain body heat. If conscious give coffee, tea, cocoa or water (exception: belly wound). If unconscious, position on his belly with his head turned slightly to one side to prevent choking.

Symptoms: The condition of shock gets progressively worse: the face becomes pale, the skin cold and clammy; breathing shallow; rapid, weak pulse; unconsciousness and death.

FRACTURES (Broken Bones)

Symptoms: Pain and tenderness near fracture; partial or complete loss of motion; deformity; swelling; discoloration about the injury.

Treatment: Splint them where they lie! For fractures of the arm or leg, apply a well-padded splint immobilizing the site of the fracture and the joints above and below. Fixing fragments of broken bone prevents tearing of blood vessels and nerves, and minimizes pain. For open fractures, where there's a break in the skin, apply a first aid dressing, then splint. For back and neck fractures, see next page.

SEVERE BURNS

Burns that are blistered or charred or cover a large area of the body need special treatment. Carefully remove or cut clothing away from burned area. Do not break blisters or try to remove bits of cloth that adhere to the skin. Cover with first aid dressing or the cleanest material available. With severe burns, shock results from dehydration. If the casualty is conscious give him sips of cool water to which packets of salt and baking soda have been added until he is drinking about 1/3 of a canteen cup every hour. If this solution causes vomiting give him plain water.

HEAT EXHAUSTION

Symptoms: Cool, moist skin; profuse sweating; headache, dizziness, weakness and rapid pulse.

Treatment: Remove patient to cool place; remove outer clothing; elevate feet; move legs up and down or massage legs; give all the water patient will drink; give two salt tablets or ¼ teaspoonful salt with each canteen of water. Seek medical aid.

CHARACTERISTICS OF INFANTRY WEAPONS

DEFINITION OF AN INFANTRY WEAPON

An Infantry Weapon Is Any Individual Or Crew-Served Weapon, Irrespective Of Size, Weight, Range, Caliber, Mobility, Or Lethality, Which Is Habitually Employed By Infantrymen In Mounted Or Dismounted Operations.

WEAPON	Common Name	Unloaded Weight (Approximate in Pounds)	Type of Feed	Method of Operation	*Cyclic (C) or Maximum Rate (M) of Fire (Rds per Min)	Sustained Rate of Fire (Rds Per Min)	*Maximum Effective Rate of Fire (Rds Per Min)	*Maximum Range (Nearest 25) Meters	*Maximum Effective Range Meters	Approximate Effective Bursting Area (In Meters)	Remarks
Hand Grenades	Fragmentation Grenade WP Grenade	M26A1 1 M34 1 ½						50 M26A1 35 M34		M26A1 15 M34 25	May be fired as a rifle Grenade using M1A2 Projection Adapter.
Weapon Antipersonnel M18	Claymore	3		Controlled Electric Detonation	One Shot				Directional Fragmentation – 60° sector with radius of 30 meters		Installed and fired by individual.
Pistol, Automatic Cal .45, M1911A1	Forty-Five	2½	7 Rd Magazine	Recoil Semi-automatic	35-42 (M)	10	21-28 (M)	150	50		
Submachinegun, Cal .45, M3A1	Submachine-gun	9	30 Rd Magazine	Blow Back Automatic	450 (C)	40-60	40-60	1550	100		
US Carbine Cal .30, M2	Carbine	5½	30 Rd Magazine	Gas Operated Semiautomatic and Automatic	750-775 (C)	40-60	40-60	2025	250		To be replaced by M14 Rifle. May be equipped with sniperscope infrared set No 1 20,000 Volts
US Rifle, 7.62mm, M14	M-Fourteen	9½	20 Rd Magazine	Gas Operated Semiautomatic and Automatic	700-750 (C) 40-60 (M) Semiautomatic 120-150 (M)Automatic	8-10	20-30 Semi-automatic 40-60 Automatic	3725	460		Full automatic capability requires installation of selector. Sustained rate based on limited tests.
US Rifle, Cal .30, M1	M-One	9½	8 Rd Clip	Gas Operated Semiautomatic		8-10	16-24	3200	460		To be replaced by M14 Rifle.
US Rifle, Cal .30 M1, with Rifle Grenade Launcher, M7A3, HEAT Rifle Grenade, M31 & Sight M15	Grenade Launcher	10½	Manual	Manual Single Shot	4 (M)	4	2	275	125		Complete round weighs approximately 1½ pounds.
US Rifle 7.62mm, M14 Rifle with Selector, Bipod and Hinged Butt Plate	M-Fourteen (AR)	12	20 Rd Magazine	Gas Operated Semiautomatic and Automatic	700-750 (C) 40-60 (M) Semiautomatic 120-150 (M) Automatic	15-20	20-30 Semi-automatic 40-60 Automatic (2 to 3 rd bursts) 120-150 (20 rd bursts	3725	460		Sustained rate based on limited tests.

*Cyclic Rate of Fire (C)..... Rate at which weapon fires automatically.
Maximum rate of Fire (M)... Greatest rate at which well-trained gunner can fire
Sustained Rate of Fire..... Rate at which weapon can fire indefinitely without
seriously overheating.

*Maximum Effective Rate... Rate at which trained gunner can fire and obtain reasonable
number of hits (50%).
Maximum Range..... Greatest distance weapon will fire.
Maximum Effective Range. Greatest distance at which gunner may be expected to fire
accurately.

Bull's-Eye . . . or Maggie's Drawers?

To help you hit the mark—whether it is preparing for a pro-pay test . . . or keeping your professional knowledge up to date—the Book Department can help you with the following reference material:

ADVANCE SHEETS:

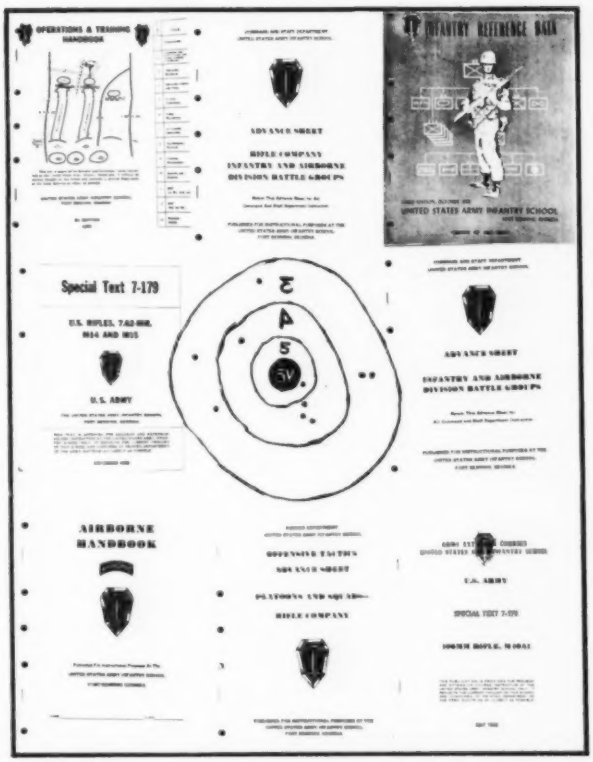
Infantry and Airborne Div.	1.75
Rifle Company, Infantry and Airborne Div.	1.00
Combat Support Company, Infantry Div.	1.00
Offensive Tactics, Rifle Platoon and Squad	1.00

HANDBOOKS:

Operations & Training	1.75
Artillery	.80
Instructor's	.80
Airborne	.80
Combat Logistics	.45

SPECIAL TEXTS:

23-92-1—4.2-Inch Mortar Gunnery	2.00
Infantry Reference Data	1.20
Communication Data	1.10
7-178—106mm Rifle, M40A1	.50
7-179—U.S. Rifles, 7.62mm, M14 and M15	.45



THE BOOK DEPARTMENT

The Infantry School, Fort Benning, Georgia

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A STILLNESS at APPOMATTOX

APRIL 1865

". . . they could see the Confederate line drawing back from in front of them, crowned with its red battle flags, and all along the open country to the right they could see the whole cavalry corps of the Army of the Potomac trotting over to take position . . . The sunlight gleamed brightly off the metal and the flags, and once again, for a last haunting moment, the way men make war looked grand and caught at the throat, as if some strange value beyond values were incomprehensively mixed up in it all.

"Then Sheridan's bugles sounded, the clear notes slanting all across the field, and all of his brigades wheeled and swung into line, every saber raised high, every rider tense; and in another minute Infantry and Cavalry would drive in. . . .

"Out from the Rebel lines came a lone rider, a young officer in a gray uniform, galloping madly . . . a white flag fluttering . . .

". . . and the watching Federals saw the Southerners wheeling their guns back and stacking their muskets as if they expected to fight no more.

"All up and down the lines the men blinked at one another, unable to realize that the hour they had waited for so long was actually at hand . . .

"It was Palm Sunday, and they would all live to see Easter . . . yet the fact of peace and no more killing and an open road home seems to have been too big to grasp, right at the moment, and in the enormous silence that lay upon the field men remembered that they had marched far and were very tired, and they wondered when the wagon trains would come up with rations.

"One of Ord's soldiers wrote that the army should have gone wild with joy, then and there; and yet, he said, somehow they did not . . .

". . . now, for some reason, the men sat on the ground and looked across at the Confederate army and found themselves feeling as they had never dreamed that the moment of victory would make them feel.

" '. . . I remember how we sat there and pitied and sympathized with these courageous Southern men who had fought for four long and dreary years all so stubbornly, so bravely and so well, and now, whipped, beaten, completely used up, were fully at our mercy—it was pitiful, sad, hard, and seemed to us altogether too bad.' . . .

"Down by the roadside near Appomattox Court House, Sheridan and Ord and other officers sat and waited while a brown-bearded little man in a mud-spattered uniform rode up. They all saluted him, and there was a quiet interchange of greetings, and then General Grant tilted his head toward the village and asked: 'Is General Lee up there?'

"Sheridan replied that he was, and Grant said: 'Very well. Let's go up.'

"The little cavalcade went trotting along the road to the village, and all around them the two armies waited in silence. As the generals neared the end of their ride, a Yankee band in a field near the town struck up 'Auld Lang Syne.' "